REFERENCE

JULY 15, 1963
Volume 10 Number 1

SCIENCE

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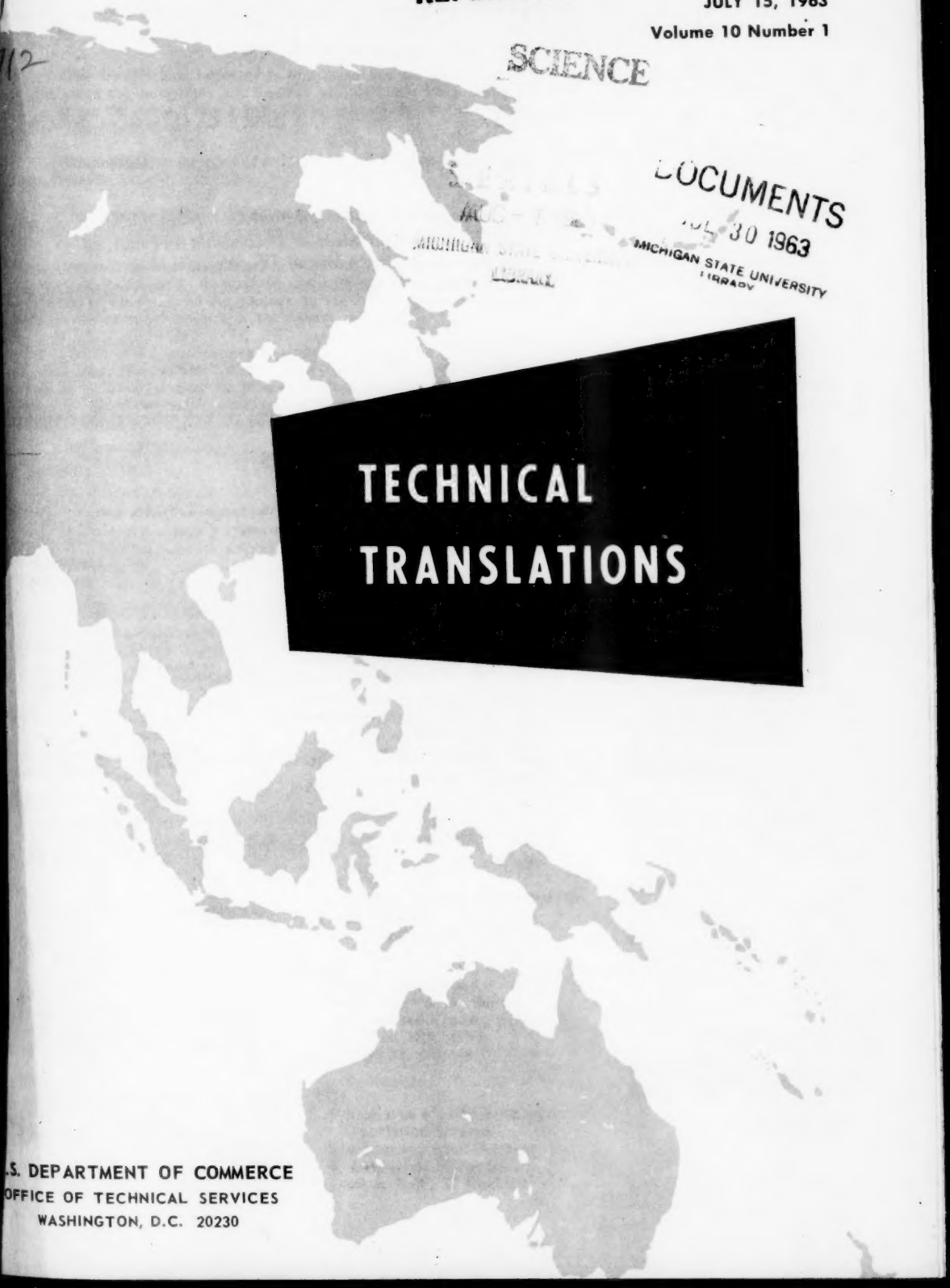

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON, D.C. 20230

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES

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SYMBOLS FOR SOURCES OF TRANSLATIONS

AC
A. Capelo
P. O. Box 46354
Hollywood 46,
California

AGI
AGI Translations Office
American Geological Institute
2101 Constitution Avenue, N.W.
Washington 25, D.C.

AGS
American Geographical Society
Broadway at 156th Street
New York 32, New York

AGU
American Geophysical Union
1515 Massachusetts Avenue, N.W.
Washington 5, D.C.

AIBS
American Institute of Biological Sciences
2000 P Street, N. W.
Washington 6, D.C.

AIP
American Institute of Physics
335 East 45th Street
New York 17, New York

AIS
Argus Information Service
624 N. Eutaw Street
Baltimore 1, Maryland

AM
Acta Metallurgica
122 East 55th Street
New York 22, New York

ANSP
Academy of Natural Sciences of Philadelphia
19th Street and the Parkway
Philadelphia 3, Pennsylvania

API
Academic Press, Inc.
111 Fifth Avenue
New York 3, New York

ARS
American Rocket Society, Inc.
20th and Northampton Streets
Waston, Pennsylvania

ATS
Associated Technical Services, Inc.
P. O. Box 271
East Orange, New Jersey

BIHR
Circulation Manager
Translations of the Beltone Institute for Hearing Research
2900 West 36th Street
Chicago 32, Illinois

BISI
British Iron & Steel Industry Translation Service
The Iron and Steel Institute
4, Grosvenor Gardens
London, S.W. 1, England

BWRA
British Welding Research Association
Abington Hall, Abington
Cambridge, England

CB
Consultants Bureau Enterprises, Inc.
227 West 17th Street
New York 11, New York

CCT
Consultants Custom Translations, Inc.,
227 West 17th Street
New York 11, New York

CHP
Cleaver-Hume Press, Ltd.
31, Wright's Lane
London, W. 8, England

CIDNT
Centralny Instytut Dokumentacji Naukowo-Technicznej
Warszawa 12
Aleja Niepodleglosci 188
Poland

CNP
Comitato Nazionale per la Produttivita
Service d'Information
Viale Regina Margherita N.83D
Rome, Italy

CSIRO
Commonwealth Scientific and Industrial Research Organization
Information Service
314 Albert Street
East Melbourne C. 2, Victoria
Australia

CTRA
The Librarian
The Coal Tar Research Association
Oxford Road
Gomersal, Leeds, England

CTS (Chem)
Chemical Translating Service
2243 Greer Road
Palo Alto, California

CTT
Columbia Technical Translations
5 Vermont Avenue
White Plains, New York

DI
Circulation Unit
Department of the Interior
Central Library
Room 1149
Washington 25, D. C.

EIS
Engineering Information Services
Kirkham, Preston, Lancashire
England

ES
Erica Stux
584 Moreley Avenue
Akron 20, Ohio

ETC
European Translations Centre
Doelenstraat 101, Delft,
The Netherlands

FRI
Fulmer Research Institute, Ltd.
Stoke Poges,
Buckinghamshire,
England

FT
Faraday Translations
15 Park Row
New York 38, New York

GB
Gordon and Breach
Publishers, Inc.
150 Fifth Avenue
New York 11, New York

GPO
Superintendent of Documents
Government Printing Office
Washington 25, D. C.

HB
Henry Brutcher
P. O. Box 157
Altadena, California

HMSO
Her Majesty's Stationery Office
P.O.B. 569
London, S.E.1, England

HTCBN
Hungarian Trading Company for Books and Newspapers "Kultura"
Budapest 62, P. O. Box 149

ICE
International Chemical Engineering
345 East 47th Street
New York 17, New York

INFOSERV
Infoserv
P. O. Box 217
West Hartford 7, Connecticut

INT
International Patent Service N. V.
P. O. Box 101
's-Hertogenbosch,
The Netherlands

IP
Interscience Publishers, Inc.,
250 Fifth Avenue
New York 1, New York

IPST
Israel Program for Scientific Translation
14 Shammai Street
P.O. Box 7145
Jerusalem, Israel

K-H
Kresge-Hooker Science Library Associates
Wayne State University
Detroit 2, Michigan

LAND-AIR
Land-Air, Inc.,
Pacific Missile Range
Point Mugu, California

LC
Photoduplication Service
Publication Board Project
Library of Congress
Washington 25, D. C.

LSA
Literature Service Associates
Route 1
Bound Brook, New Jersey

MACL
Maclaren and Sons, Ltd.
Maclaren House
131 Great Suffolk Street
London, S.E. 1, England

MACM
Macmillan Co.
60 Fifth Avenue
New York 11, New York

MDF
Morris D. Friedman
7553 Waterford Drive,
San Jose 29, California

MT
M. de O. Tollemache
Pennyford Cottage
Burrington,
Umberleigh, Devon, England

MUL-
Mulholland Engineering Translations
26 Burton Woods Lane
Cincinnati 29, Ohio

NASA
National Aeronautics and Space Administration
1520 H Street, N. W.
Washington 25, D. C.

NRCC
National Research Council, Library
Ottawa 2, Canada

OB
Oliver & Boyd, Ltd.
Tweeddale Court
14 High Street
Edinburgh 1, Scotland

OSA
Optical Society of America, Inc.
33 University Road
Cambridge 38, Massachusetts

OTS
Office of Technical Services
Department of Commerce
Washington 25, D. C.
(Also Available through Department of Commerce Field Offices)

PERA
The Information Manager
Production Engineering Research Association
Melton Mowbray
Leicestershire, England

PLP
Plenum Press, Inc.
227 West 17th Street
New York 11, New York

PP
Pergamon Press
122 East 55th Street
New York 22, New York

PS
Primary Sources
11 Bleecker Street
New York 12, New York

RIA
Research International Associates
1522 Connecticut Avenue, N. W.
Washington 6, D. C.

RIS
Research Information Service
40 East 23rd Street
New York 10, New York

SA
Seizaburo Aoki
1069 Minami Nakadori 2-chome
Fujisawa, Japan

SLA
SLA Translations Center
The John Crerar Library
35 West 33rd Street
Chicago 16, Illinois

STS
Scientific Translation Service
1938 Verdugo Knolls Drive
Glendale, California

STT
SCIENTECH, Scientific and
Technical Translations
P. O. Box 3530
Cleveland 18, Ohio

TDL
Mr. John Wiley
Technical Development
Laboratories
P. O. Box 769
Savannah, Georgia

TF
Taylor and Francis, Ltd.
Red Lion Court, Fleet Street,
London, E.C. 4, England

TIB
Technische
Informationsbibliothek
Am Welfengarten 1
Hannover, West Germany

TIC
Technical Information Company
Patents Department
Chancery House
Chancery Lane
London, W.C.2, England

TTIS
Translation and Technical
Information Services
32, Manaton Road
London, S.E. 15, England

WBI
Warren Birkenhead, Inc.,
901 Morthern Life Tower
Seattle 1, Washington

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Pittsburgh13, Pennsylvania

Georgia Institute of Technology
Price Gilbert Library
Atlanta, Georgia

MIT Libraries
Technical Reports, Room 14-E210
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

The Pennsylvania State University
University Park, Pennsylvania

University of California
Engineering Library
Los Angeles, California

University of Utah
University of Utah Library
Salt Lake City, Utah

Library of Congress
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UNITED STATES DEPARTMENT OF COMMERCE
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WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

Volume 10, Number 1 Pages 1 - 118 July 15, 1963

*Descriptors marked with an asterik are listed in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 145 (GENERAL SERIES). 23 Apr 63, 12p. JPRS: 18845.
Order from OTS $0.50 63-21644

Abstract trans. of Nauka Polska, 1962, v. 10, no. 6[42] p. 1-61, 63-67, 69-121, 123-131, 133-174.

DESCRIPTORS: *Abstracts, Bibliographies, *Scientific organizations, Scientific research, Conferences, Scientific personnel.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 165 (GENERAL SERIES). 7 May 63, 9p. JPRS: 19096
Order from OTS $0.50 63-21778

Abstract trans. of Magyar Tudomany (Hungary) 1963, v. 8[70] no. 2, p. 79-135, 138-151.

DESCRIPTORS: *Abstracts, Bibliographies, Scientific organizations, Scientific personnel, Conferences.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 157 (GENERAL SERIES). 30 Apr 63, 15p. JPRS: 19014.
Order from OTS $0.50 63-21733

Abstract trans. of Nauka Polska, 1963, v. 11, no. 1(43) p. 1-17, 19-43, 45-75, 77-89, 91-173, 175-212.

DESCRIPTORS: *Abstracts, Bibliographies, *Scientific organizations, Conferences, Scientific personnel, Education.

AGRICULTURE

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 61. 12 Apr 63 [16]p. JPRS: 18680.
Order from OTS $0.50 63-21567

Trans. from Rabochaya Gazeta (USSR) 1963, 13 Feb; Sel'skaya Zhizn' (USSR) 1963, no. 52, 2 Mar, p. 1; no. 58, 9 Mar, p. 1.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Loaders.

Contents:
New tractor loader
Lag in preparation of farm equipment for 1963 spring planting
Lag in tractor and agricultural machinery parts production for 1963 spring planting.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 63. 23 Apr 63, 9p. JPRS: 18839.
Order from OTS $0.50 63-21642

Trans. from Pravda, Moscow (USSR) 1963, no. 40, 9 Feb, and Ekonomicheskaya Gazeta (USSR) 1963, no. 7(80) 16 Feb.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Supplies, Scheduling.

Contents:
T-74 tractors remain idle at the Khar'kov Tractor Plant, by F. Kozhukhov
Problems of the Minsk Tractor Plant, by Ya. Dubrovin.
New wide operating-width machines, by G. T. Myagkov
VN-4 water pumping installation, by N. I. Polunin (partial trans.)
New farm machines produced by Lyubertsy Plant imeni Ukhtomskii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 64. 25 Apr 63, 14p. JPRS: 18901.
Order from OTS $0.50 63-21674

Trans. of Planovoe Khozyaistvo (USSR) 1963 [v. 40] no. 3, p. 63-66; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 2, p. 65-72; and from Sel'skaya Zhizn' (USSR) 1963, 31 Mar, p. 1; Czerwony Sztandar (Lithuanian SSR) 1963, 21 Feb, p. 2.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Maintenance, Economics, Tractor engines, Water supplies, Pumps, Plants (Botany), Sprays, Vegetables.

Contents:
T-125 truck-tractors start state tests, by G. Makeeva
Specialization of agricultural machine building, by G. Fradkin

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 65. 30 Apr 63, 21p. JPRS: 18963.
Order from OTS $0.75 63-21711

Trans. of Traktory i Sel'khozmashiny (USSR) 1963 [v. 33] no. 2, p. 24-27, 41-43, back cover; and from Pravda, Moscow (USSR) 1963, 2 Mar, p. 2.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Plants (Botany), Seeds, Cereals, Soils, Agriculture.

Contents:
Results of a study of the operation of machine-tractor units at increased speeds, by E. A. Mekhlin
The ZhRsh-4.5 windrow harvester, by A. A. Lavrov and A. N. Pugachev (excerpts)
The PRS-4-30 plough for rice fields, by G. D. Kalyuzhnyi and G. I. Danilevich (excerpts)
The SKNK-6 combined corn seeder, by V. I. Serov (excerpts)
The SUP-4A universal seeding planting machine, by A. M. Il'yin (excerpts)
General purpose plough for grain and industrial crop ploughing
Virgin steppes are awaiting the Kirovets tractor, by M. Korolev.

Arutyunyan, M.
INCREASE THE PLANTING OF SORGHUM (Rasshirit Posevy Sorgo). 17 Oct 62, 5p. Trans. A-1374.
Order from OTS or SLA $1.10 63-13030

Trans. of Sotsialisticheskoe Sel'skoe Khozyaistvo Azerbaidzhana (USSR) 1961, v. 10, no. 5, p. 49-51.

DESCRIPTORS: Plants (Botany), *Food, *Cattle, Production.

Batel, W. and Thiel, R.
SELF-ADJUSTING AGRICULTURAL IMPLEMENTS (Über die Selbsttätige Regelung an Landmaschinen). 4 Dec 62 [18]p. (foreign text included) 6 refs.
Order from SLA $1.60 63-10599

Trans. of Grundlagen der Landtechnik (West Germany) 1962, v. 14, p. 5-13.

DESCRIPTORS: *Agricultural machinery, Adaptive control systems, Design, *Mechanical engineering.

Eggenmüller, Alfred.
EXPERIMENTS WITH GROUPS OF HOES OSCILLATING IN OPPOSITE PHASE (Versuche mit Gruppen Gegeneinander Schwingender Hackwerkzeuge). [1962] [51]p. (foreign text included).
Order from SLA $5.60 62-18737

Trans. of Grundlagen der Landtechnik (West Germany) 1958, v. 10, p. 70-88.

DESCRIPTORS: *Agricultural machinery, Design, Oscillation, *Soils

(See also 62-18736)

Eggenmüller, Alfred.
FIELD EXPERIMENTS WITH AN OSCILLATING PLOUGH BODY (Feldversuche mit einem Schwingenden Pflugkörper). [1962] [21]p. (foreign text included) 2 refs.
Order from SLA $2.60 62-18738

Trans. of Grundlagen der Landtechnik (West Germany) 1958, v. 10, p. 89-95.

DESCRIPTORS: *Agricultural machinery, Design, Oscillation, *Soils

From the results on the optimum form of oscillation of a tool in the shape of an inclined plane, conclusions were drawn about the choice of oscillation characteristics for the share and mouldboard of a plough body. An oscillating plough body, in which the share and mouldboard oscillated in different directions in space and in opposite phase, was constructed on the basis of these considerations. In experiments on loamy sand soil, a reduction in draught force of up to 70% was achieved at an amplitude of 9 mm, a frequency of 20 Hz and a forward speed of 1 km/hr. At higher forward speeds, the reduction in draught force is once more diminished (at the same oscillation characteristics), but this would be balanced by a higher frequency. The total power requirement for the oscillating plough body (draught plus oscillation) is, however, 30% to 100% higher than with rigid bodies. (Author) (See also 62-18737)

Eggenmüller, Alfred.
INVESTIGATING ON OSCILLATING RIDGING BODIES (Untersuchungen an Schwingenden Häufelkörpern). [1962] [21]p. (foreign text included) 7 refs.
Order from SLA $2.60 62-18739

Trans. of Grundlagen der Landtechnik (West Germany) 1958, v. 10, p. 143-150.

DESCRIPTORS: *Agricultural machinery, Design, Oscillation, *Soils

(See also 62-18738)

Eggenmüller, Alfred.
OSCILLATING IMPLEMENTS: KINEMATICS AND EXPERIMENTS WITH SINGLE MODEL TOOLS (Schwingende Bodenbearbeitungswerkzeuge: Kinematik und Versuche mit Einzelnen Modellwerkzeugen). [1962] [41]p. (foreign text inlcuded) 4 refs.
Order from SLA $4.60 62-18736

Trans. of Grundlagen der Landtechnik (West Germany) 1958, v. 10, p. 55-69.

DESCRIPTORS: *Agricultural machinery, Models (Simulations), Design. Oscillation, Mechanics, *Soils

Martini, Z. and Pantera, B.
THE WORK OF HARROWS ON SLOPES (Praca Brony na Stoku) tr. by E. Strassburger. 1963 [12]p. 1 ref. PL-480 Agr.
Order from OTS $0.50 61-31258

Trans. of [Rolnictwo] (Poland) 1960, v. 10, no. 29, p. 35-45.

DESCRIPTORS: *Agricultural machinery, Operation, *Soils, Terrain, *Erosion, Inhibition.

Harrow operation on a slope along the contour line in soil particles displacement approximately 10.5 cm down the slope. Average, upward and downward displacements along the largest slope gradient are 12.8 cm and 34.8 cm respectively. The work harrow at an angle of 45^{o} to the contour line produces upward and downward displacements of 7.5 cm and 25.1 cm respectively. An anti-erosive effect of cultivation may be attained if the direction of movement were perpendicular to the contour line, upward, and at an angle to the contour line, upward. Downslope cultivation is unpracticable as it results in considerable downward displacement of soil particles, thus encouraging erosion. (Author) (See also 61-31257)

Martini, Z., Pantera, B., and Drozd, M.
THE WORK OF SPRING CULTIVATORS OF SLOPES (Praca Kultywatora Sprezynowego na Stokach) tr. by E. Strassburger. 1963 [11]p. 1 ref. PL-480 Agr.
Order from OTS $0.50 61-31257

Trans. of [Rolnictwo] (Poland) 1959, v. 9, no. 25, p. 127-134.

DESCRIPTORS: *Agricultural machinery, Operation, *Soils, Terrain, *Erosion, Inhibition.

On the basis of results provided by studies on the work of the cultivator on slopes the following conclusions may be drawn: (1) The angle of throw increases on compact soils; (2) Round-trip passage of the cultivator along the contour line results in larger downward displacement of soil particles in places where the first passage had been effected down the slope; (3) The first passage along the contour line brings about larger displacement of soil particles than the return one along the same trip. Both these passages jointly caused large slides of the order of 16 cm, i.e. the same as had resulted from the most unfavorable passages at an angle of 45^{o} down the slope. (4) The round-trip method should be applied when cultivating sloping fields provided that the return passage will be carried out along the same trip. The first trip should be effected upward, or at an angle close to 45^{o} in relation to the contour line. (Author)

Ozol, A.
INSTITUTES OF THE ACADEMY OF SCIENCES LATVIAN SSR SERVING AGRICULTURE. 25 Apr 63, 7p. JPRS: 18895.
Order from OTS $0.50 63-21671

Trans. of Akademiya Nauk Latviiskoi SSR, Riga. Izvestiya, 1962, no. 7[180] p. 3-8.

DESCRIPTORS: *Agriculture, *Animals, *Plants (Botany), Biology, *Soils, Biochemistry, Fertilizers, Food, Construction, *Economics.

Animal Husbandry

Kvitkin, Yu. P.
CHARACTERISTICS OF THE MORPHOLOGICAL COMPOSITION AND THE PHYSICO-CHEMICAL PROPERTIES IN THE BLOOD OF REINDEER WHEN IMMUNIZED WITH STI VACCINE AGAINST ANTHRAX (Kharakteristika Morfologicheskogo Sostava i Fiziko-Khimicheskikh Svoistv Krovi u Severnykh Olenei pri Immunizatsii Ikh Protiv Sibirskoi Yazvy Vaktsinoi STI). 23 Oct 62, 14p. 20 refs. Trans. V-1802.
Order from OTS or SLA $1.60 63-13229

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1961, v. 25, p. 113-121.

DESCRIPTORS: Biophysics, Biochemistry, *Blood, Morphology, *Cells (Biology), *Adaptation (Physiology), *Anthrax vaccine, *Immunology, Veterinary medicine.

Lombardi, D.
ACTION OF THIOCTIC ACID AND RESERPINE ON THE WEIGHT GAIN OF CHICKS (Azione dell'Acido Tioctico e della Reserpina sull'Accrescimento Ponderale del Pulcino). [Oct 62] 3p. 2 refs.
Order from SLA $1.10 63-10093

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1962, v. 38, 15 July, p. 610-611.

DESCRIPTORS: *Octanoic acid, *Reserpine, Body weight, Growth, *Chickens.

Tsokolenko, D. T., and Chernyi, P. V.
IDENTIFICATION AND DETERMINATION OF THE PATHOGENIC PROPERTIES OF BACILLUS ANTHRACIS WITH THE AID OF A MODIFIED BIOLOGICAL TEST (Identifikatsiya i Opredelenie Patogennykh Svoistv Vatsilly Antraksa pri Pomoshchi Modifitsirovannoi Biologicheskoi Proby). 11 Jan 63, 3p. Trans. V-1816.
Order from OTS or SLA $1.10 63-15465

Trans. of Veterinariya (USSR) 1962, v. 39, no. 8, p. 77-78.

DESCRIPTORS: Identification, *Bacillus anthracis, Test methods, Diagnosis, Pathology, *Anthrax, Cattle, Veterinary medicine.

The cited modification of the biotest permits identifying the pathogen of anthrax in a period of from 1.5 to

2 hours from the amoment of inoculation of the pathological material. Death of the control mice (infected by utilizing the classical method) was observed in four cases in 12-24 hours. The suggested method is very sensitive and rapid, but it is necessary to have a great number of experimental mice for its carrying out. Utilization of this method is possible under conditions of each laboratory; this will permit excluding all the errors, which are admissible in the diagnosis of anthrax. (Author)

Plant Cultivation

SCIENTIFIC PAPERS OF THE INSTITUTE OF PLANT PROTECTION, 1959, VOL. 1, NOS. 1 AND 3 [SELECTED ARTICLES] tr. by A. Radziwill. 1963 [176]p. 209 refs. PL-480 Agr.
Order from OTS $2.00 60-21574

Trans. of Instytut Ochrony Roslin, Poznan. Prace Naukowe (Poland) 1959, v. 1, no. 1, p. 7-44, 107-134, 231-273; no. 3, p. 5-27, 37-72, 75-91, 95-131.

DESCRIPTORS: *Plants (Botany), *Diseases, Potatoes, *Insecticides, Animals, Ecology, *Insects, Coleoptera, Diptera, Vegetables, Viruses, Agriculture, Hops, Physiology, *Light, Biochemistry, Scientific research.

Contents:
The influence of mass application of insecticides on the zoocoenosis of potato fields, by W. Wegorek and Z. Wilusz
The extent of damage caused by the gout fly (Chlorops Pumilionis Bj) by Z. Golebiowska and J. Boczek
Investigations on effects of cultivation on losses in winter rape yields caused by pests, by P. Szulc
Investigations on the cabbage seedstalk curculio (Ceutorhynchus Quadridens Panz.) by J. Dmoch
Preliminary investigations over the influence of seeding time and environment on the propagation of virus diseases in beet, by J. Narkiewicz-Jodko
Degenerative diseases of hops in Poland, by T. Stachyra
Studies on the direct and indirect influence of the photoperiod on the development and physiology of the Colorado potato beetle (Leptinotarsa Decemlineata Say) by W. Wegorek.

Lewicki, Stefan and Ruszkowski, Marek.
INVESTIGATIONS ON THE TRANSMUTATION OF BIOTYPES IN WHEAT, PT. 3 (Badania nad Przemiana Biotypow u Pszenicy, cz. III) tr. by A. Radziwill. 1962, 12p. 2 refs. PL-480 Agr.
Order from OTS $0.50 61-11397

Trans. of Hodowla Roslin, Aklimatyzacja i Nasiennictwo (Poland) 1959, v. 3, no. 3, p. 321-334.

DESCRIPTORS: *Wheat, *Mutations, Morphology, Genetics, Growth, Resistance.

Investigations proved that new botanical varieties of spring wheat with heritable characters can be obtained by sowing certain spring wheat varieties in the autumn. The present paper sets out to compare development features and the productive value of the mutants with those of the original forms, and to indicate how forms obtained can be used in spring sowing as new spring wheat varieties.

Manka, Karol.
FIELD AND LABORATORY INVESTIGATIONS ON THE HONEY FUNGUS ARMILLARIA MELLEA (VAHL) QUEL (Badania Terenowe i Laboratoryjne nad Opienka Miodowa Armillaria Mellea (Vahl) Quel) tr. by Stefan Lukomski. 1962 [87]p. 62 refs. PL-480 Agr.
Order from OTS $1.00 60-21235

Trans. of Instytut Badawczy Lesnictwa. Prace (Poland) 1953, no. 94, p. 1-96.

DESCRIPTORS: *Forestry, Trees, *Spruce, Diseases, *Parasitic infections, Fungus infections, Etiology, *Pest control, *Fungi, *Culture media.

This work, performed on the teritory of the Andrychow Forestry District, and in the laboratory of the University of Poznan Phytopathology Department embraces investigations on the symptoms and reasons for the dying out of spruce forests. The principal method of investigation was that of artificial cultures. From samples taken from the roots of dying spruce, pure cultures of many fungi were obtained. Preeminent attention was paid to two of these: the honey fungus, and a new, hitherto unidentified species, provisionally called "A 125". Investigations concerning the biology of those two species were conducted on artificial media. (Author)

Scherpe.
THE IMPORTANCE OF NICOTINE IN PLANT PROTECTION AND THE PREPARATION OF EXTRACTS. [1962] 6p.
Order from K-H $7.50 K-H 3879 c

Trans. of Obst- und Gemüsebau[sic] 1927, v. 16, p. 253-254.

DESCRIPTORS: *Plants (Botany), *Pest control, *Nicotine, Preparation.

Voznesenskii, V. L.
MEASURING THE RATE OF PHOTOSYNTHESIS BY THE CHANGE IN THE ELECTRICAL CONDUCTIVITY OF THE ABSORBING ALKALI SOLUTION (Izmerenie Intensivnosti Fotosinteza po Izmeneniyu Elektroprovodnosti Pogloshchayushchego Rastvora Shchelochi). Nov 62 [32]p. 63 refs. RTS-2145.
Order from OTS or SLA $3.60 63-15249

Trans. of Akademiya Nauk SSSR. Bot[anicheskii] Inst-[itut]. Trudy. [Seriya] 4: [Eksperimental'naya Botanika] 1960, no. 14, p. 258-282.

DESCRIPTORS: *Photosynthesis, Electrical conductance, Photoconductivity, Absorption, Carbon dioxide, Hydroxides, *Electrochemistry.

ASTRONOMY

Babii, V. I.
SELECTION OF THE TIME CONSTANT FOR A RADIO INTERFEROMETER. 29 Dec 61, 2p.
Order from OTS or SLA $1.10 63-10734

Trans. of #Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1962, v. 5, no. 4, p. 801-802.

DESCRIPTORS: *Radio interferometers, Radio astronomy, Time.

Zverev, M. S.
SOVIET CATALOGING OF FAINT STARS IN THE SOUTHERN HEMISPHERE. 17 May 63, 6p.
JPRS: 19262.
Order from OTS $0.50 63-21848

Trans. of Akademiya Nauk SSSR. Vestnik, 1963, v. 33, no. 2, p. 88-91.

DESCRIPTORS: *Stars, *Catalogs, Indexes, Astronomy, Southern Hemisphere.

Astrophysics

SOVIET-BLOC RESEARCH IN GEOPHYSICS. ASTRONOMY, AND SPACE, NO. 57. 17 Apr 63, 41p.
JPRS: 18750.
Order from OTS $16.00/year
foreign $20.00/year 61-11147-57

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 58. 1 May 63, 21p.
JPRS: 19023.
Order from OTS $16.00/year 61-11147-58
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, Oceanography, *Meteorology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

SOVIET REPORTS ON METEOR OBSERVATION BY RADAR. 30 Apr 63, 22p. 13 refs. JPRS: 18986.
Order from OTS $0.75 63-21724

Trans. of Kiev U. Sbornik Rabot po Mezhdunarodnomu Geofizicheskomu Godu (USSR) 1961, no. 1, p. 26-36 and 49-51.

DESCRIPTORS: *Meteors, *Radio astronomy, *Radar scanning, Radio waves, Scattering, Radar equipment, Design.

Radar observations of meteor streams, by V. G. Kruchinenlo and others
Apparatus for experimental investigation of the scattering of radio waves by meteor trails, by I. V. Bairachenko and E. D. Podgorodetskii.

Aksenov, E. P., Grebenikov, E. A., and Demin, V. G.
THE GENERALIZED PROBLEM OF TWO FIXED CENTERS AND ITS APPLICATION FOR ARTIFICIAL EARTH SATELLITES. 16 May 63, 15p. 14 refs.
JPRS: 19225.
Order from OTS $0.50 63-21832

Trans. of #Astronomicheskii Zhurnal (USSR) 1963, v. 40, no. 2, p. 363-372.

DESCRIPTORS: *Satellites (Artificial), *Motion, Theory, Gravity, *Equations of motion, Polynomials, Differential equations, Celestial mechanics, Complex numbers, Real variables, Series.

A solution is obtained for the problem of two fixed centers, under the condition that the masses of the attracting centers and the distance between them are complex values and that the potential assumes only real values at any position of the moving point in space. It is shown that such a generalization allows for the two fixed centers problem to be successfully applied in the theory of motion of artificial earth satellites. (Author)

Barabashov, N. P.
STRUCTURE OF THE MOON'S SURFACE AND INVESTIGATION OF THE FIRST PHOTOGRAPHS OF ITS FAR SIDE [Struktura Poverkhnosti Luny i Issledovanie Pervykh Fotografii Ee Obratnoi Storony] tr. by Andre L. Brichant. Mar 63 [4]p. 19 refs.
Available from AIAA in Its Journal, v. 1, no. 3, $5.00

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 56-61.
Other translations are available from AGI $5.00; from STS $7.80 as STS Trans-16, 25 Jan 62, 6p.; abstract trans. from OTS or SLA $1.10 as 62-24485, AID-62-37, 29 Mar 62 [2]p.

DESCRIPTORS: *Moon, Exploration, Photography, Satellite vehicle research, Lunar probes

For abstract see Technical Translations 8: 193, 1962.

Bruzek, A[nton]
ABOUT THE RELATIONSHIP OF FLARES AND MAGNETIC FIELD STRUCTURE. [1962] [15]p. (refs. omitted).
Order from SLA $1.60 63-10667

Trans. of Fraunhofer Institut. Mitteilungen (West Germany) no. 42 or 46[sic] [Reprinted from Zeitschrift für Astrophysik (Germany) 1960, v. 50, no. 4, p. 110-120].

DESCRIPTORS: *Magnetic fields, *Solar flares, Sunspots, Solar disturbances, Structures, Analysis.

Chebotarev, G. A.
MOTION OF THE PERIHELION OF MERCURY AND THE GENERAL THEORY OF RELATIVITY. [1962] 14p.
Order from OTS or SLA $1.60 62-14804

Trans. of Priroda (USSR) 1946 [v. 35] no. 4, p. 5-8.

DESCRIPTORS: *Celestial mechanics, Planets, *Mercury (Planet), *Relativity theory, Astronomy.

Dolginov, Sh. Sh., Eroshenko, E. G. and others.
INVESTIGATION OF THE MAGNETIC FIELD OF THE MOON, tr. by Andre L. Brichant. Feb 63 [3]p. 1 ref.
Available from AIAA in Its Journal, v. 1, no. 2, $5.00.

Trans. of Geomagnetizm i Aeronomiya (USSR) 1961 [v. 1] no. 1, p. 21-29.

DESCRIPTORS: *Space probes, *Magnetic fields, *Moon, Magnetometers, Rockets.

Dravskikh, Z. V. and Dravskikh, A. F.
PRELIMINARY RESULTS OF THE OBSERVATION OF THE PARTIAL SOLAR ECLIPSE OF 15 FEB 61, AT A WAVELENGTH OF 3.28 CM, tr. by P. A. Kazakov. [1962] 2p. 4 refs. [CSIRO Trans.] 6184.
Order from OTS or SLA $1.10 63-19102

Trans. of Solnechnye Dannye (USSR) 1961, no. 10, p. 63.

DESCRIPTORS: *Solar eclipses, *Radio astronomy, Astronomy, Astronomical data.

Elwert, Gerhard.
THE SOFT X-RAY RADIATION OF THE UNPERTURBED SOLAR CORONA (Die Weiche Röntgenstrahlung der Ungestörten Sonnenkorona). [1962] 69p. 37 refs.
Order from SLA $6.60 63-10613

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1954, v. 9a, p. 637-653.
Another trans. is available from SLA as 58-2651, NP-tr-177, 1954, 56p

DESCRIPTORS: *X rays, *Electromagnetic waves, *Solar corona, *Ionization, Energy, Absorption, Recombination reactions, Continuous spectrum, Line spectrum, Electron density, Excitation, Numerical analysis, *Ionosphere.

Savenko, I. A., Pisarenko, N. F., and Shavrin, P. I.
DOSIMETRIC MEASUREMENTS ON THE SECOND SOVIET SPACESHIP SATELLITE [Dozimetricheskie Izmereniya na Vtorom Sovetskom Kosmicheskom Korable-Sputnike] tr. by Andre L. Brichant. Feb 63 [4]p. 10 refs.
Available from AIAA in Its Journal, v. 1, no. 2, $5.00.

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 71-77.
Another trans. is available from STS $9.10 as STS Trans-17, 2 Jan 62, 7p.

DESCRIPTORS: *Satellite vehicle research, *Spaceships, Instrumentation, Dosimeters, Tests, *Cosmic rays, Space environmental conditions, Charged particles

Shchigolev, B. M.
APPROXIMATE CALCULATION OF AN EPHEMERIS IN UNPERTURBED ELLIPTIC MOTION, tr. by F. T. Smith. Feb 63 [6]p. 2 refs.
Available from AIAA in Its Journal, v. 1, no. 2, $5.00

Trans. of Moscow U. Vestnik. Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii (USSR) [1958, v. 13] no. 4, p. 45-56.
Also available from LC or SLA mi$2.70, ph$4.80 as 60-13018, Rand T-118, 9 Oct 59 [26]p.

DESCRIPTORS: *Elliptical orbit trajectories, Planets, *Celestial mechanics, Numerical analysis, *Equations of motion, Bodies of revolution, Partial differential equations

For abstract see Technical Translations 3: 474, 1960.

Vernov, S. N., Savenko, I. A. and others.
OUTER RADIATION BELT OF THE EARTH AT 320 km ALTITUDE [Vneshnii Radiatsionnyi Poyas Zemli na Vysote 320 km] tr. by Andre L. Brichant. Feb 63 [4]p. 5 refs.
Available from AIAA in Its Journal, v. 1, no. 2, $5.00.

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 10, p. 34-39.
Another trans. is available from STS $7.80 as STS Trans-5, 7 Jan 62, 6p.

DESCRIPTORS: *Radioactivity, Ionosphere, *Earth, *Van Allen radiation belt, *Electrons, Life expectancy

Yarov-Yarovoi, M. S.
ON THE EXPANSION OF THE FORCING FUNCTION OF THE TWO-BODY-ATTRACTION UNDER CERTAIN SUPPOSITIONS ON THE DISTRIBUTION OF THEIR DENSITY. [1962] 8p. 2 refs.
Order from OTS or SLA $1.10 63-10337

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 6, p. 58-63.

DESCRIPTORS: *Celestial mechanics, Functions, Distribution, *Density, *Inertia, Euler's angles, Equations, Equations of motion.

BEHAVIORAL SCIENCES

BIOGRAPHIC NOTES ON HUNGARIAN SCIENTISTS.
6 May 63, 14p. JPRS: 19060.
Order from OTS $0.50 63-21742

Trans. of Magyar Tudomany (Hungary) 1962, v. 7[69] no. 11, p. 735-736; 1963, v. 8[70] no. 1, p. 69-71; Muszaki Elet (Hungary) 1963, v. 18, no. 6, p. 1, 4.

DESCRIPTORS: *Biographies, *Scientific personnel, Personnel, Awards, Hungary.

Contents:
New doctors and candidates Sep 62
New doctors and candidates Nov 62
Kossuth prize winners: 1963.

PROBLEMS OF PSYCHOLOGY, 1962 [VOL. 8] NO. 5: [SELECTED] TRANSLATIONS. 16 Apr 63 [65]p.
27 refs. JPRS: 18719.
Order from OTS $1.75 63-21580

Trans. of #Voprosy Psikhologii (USSR) 1962 [v. 8] no. 5, p. ##15-30, 75-83, 107-112, ##184-189.
##Other translations are available from OTS $0.75 as 63-21087, JPRS-17544, 8 Feb 63 [23]p. and $0.50 as 63-21095, JPRS-17574, 12 Feb 63 [21]p.

DESCRIPTORS: *Psychology, *Automation, Mathematical analysis, Geometric forms, *Perception, *Vision, *Cybernetics.

Contents:
Crucial problems in engineering psychology, by V. P. Zinchenko and D. Yu. Panov
A mathematical analysis of rectilinear forms perceived visually, by V. S. Ivanov
On the subject of social psychology, by B. D. Parygin
A conference on Psychological Problems of Cybernetics, Moscow, by N. I. Maizel' and L. V. Fatkin.

Sidorov, Orest Aleksandrovich.
SOVIET BOOK ON HUMAN ENGINEERING (OUTLINE).
18 Apr 63 [18]p. JPRS: 18772.
Order from OTS $0.50 63-21607

Trans. of mono. Fiziologicheskie Faktory Cheloveka Opredelyayushchie Komponovku Posta Upravleniya Mashinov (Human Physiological Factors Determining the Arrangement of a Machine Control Post) Moscow, 1962, p. 3-12 and 360-363.

DESCRIPTORS: *Human engineering, *Industrial psychology, Positioning reactions, *Machines, Anatomy, *Physiology, Safety.

Contents:
Foreword
Introduction
Table of contents of the book.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 143 (BIOLOGY AND MEDICINE SERIES). 22 Apr 63, 41p. JPRS: 18835.
Order from OTS $1.25 63-21640

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Pharmacology, Drugs, Speech, Hypnosis, *Diseases, Poisoning, Surgery, Neurology, Reflexes, Stimulation, Plants (Botany), Biochemistry, Zoology, Toxicity, Allergy, Cardiovascular system, Bioelectronics, Psychiatry, Medical equipment.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 146 (BIOLOGY AND MEDICINE SERIES). 23 Apr 63, 23p. JPRS: 18846.
Order from OTS $0.75 63-21645

Consists of abstracts of articles from selected scientific and technical journals of East Germany and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Parasites, Toxicity, Zoology, Veterinary medicine, Chemistry, Chemotherapy, Ecology, Plants (Botany), Physiology, Biochemistry, *Diseases, Microorganisms, Pharmacology, Neurology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 151 (BIOLOGY AND MEDICINE SERIES). 25 Apr 63, 46p. JPRS: 18909.
Order from OTS $1.25 63-21681

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Diseases, Pathology, Biochemistry, Veterinary medicine, Physiology, Neurology, Diagnosis, Chemotherapy, Wounds and injuries, Aviation medicine, Fatigue (Physiology), Hearing, Food, Anesthesia, Surgery, Cardiovascular system, Psychiatry, Military personnel, Psychology, Plants (Botany), Immunology, Cancer, Genetics, Embryos, Gynecology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 153 (BIOLOGY AND MEDICINE SERIES). 30 Apr 63, 46p. JPRS: 18976.
Order from OTS $1.25 63-21717

Consists of abstracts of articles from selected scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Bibliograpnies, *Biology, *Medicine, *Diseases, Physiology, Drugs, Anatomy, Diet, Radiobiology, Biochemistry, Veterinary medicine, Surgery, Reproduction (Physiology), Food, Gynecology, *Pathology, Diagnosis.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 158 (BIOLOGY AND MEDICINE SERIES). 30 Apr 63, 39p. JPRS: 19019.
Order from OTS $1.25 63-21737

Consists of abstracts of articles from selected scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Reproduction (Physiology), Animals, *Diseases, Food, Parasites, Veterinary medicine, Physiology, Radiological contamination, Cancer, Chemical analysis, Viruses, Drugs, Ecology, Toxicity, Infants, Radiobiology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 160 (BIOLOGY AND MEDICINE SERIES). 6 May 63, 30p. JPRS: 19063.
Order from OTS $1.00 63-21751

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Drugs, Therapy, Nutrition, Diagnosis, Physiology, Pathology, *Diseases, Cardiovascular system, Pharmacology, Radiobiology, Pregnancy, Medical research, Veterinary medicine.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 163 (BIOLOGY AND MEDICINE SERIES). 7 May 63, 20p. JPRS: 19094.
Order from OTS $0.75 63-21776

Consists of abstracts of articles from the scientific and technical journals of East Germany and Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Parasites, Toxoplasma, Animals, Pathology, Diseases, Physiology, Immunology, Drugs, Biochemistry, Psychiatry, Neurology, Cancer, Infants, Cardiovascular system, Veterinary medicine.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 164 (BIOLOGY AND MEDICINE SERIES). 7 May 63, 27p. JPRS: 19095.
Order from OTS $0.75 63-21777

Consists of abstracts of articles from the scientific and technical journals of Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Diseases, Pathology, Viruses, Therapy, Immunology, Histology, *Physiology, Animals, Veterinary medicine, Diagnosis, Anatomy, Surgery, Biochemistry, Radiobiology, Toxicity, Drugs, Nutrition.

HEMATOLOGY AND BLOOD TRANSFUSION. 30 Apr 63, 29p. 42 refs. JPRS: 18964.
Order from OTS $1.00 63-21712

Trans. of #Problemy Gematologii i Perelivaniya Krovi (USSR) 1963 [v. 8] no. 1, p. 17-21, 34-42, 46-47.

DESCRIPTORS: *Hematology, *Blood transfusions, Surgery, Blood serum, *Hemopoietic system, Radiation effects, Leukemia, Blood proteins, Nutrition, Hydrolysis, *Blood platelets, Preservation, *Blood plasma, *Burns, Diseases.

Contents:
Influence of trephenized sera on hemopoiesis in healthy and irradiated animals and on the course of experimental transplanted leucosis, by S. N. Ageeva and M. P. Khokhlova
Dry aminokrovin (a blood-protein hydrolysate) as a source of parenteral protein nutrition, by A. I. Shternberg
Extraction and preservation of thrombocytic mass, by A. A. Kopeikina
The use of dry plasma, preserved for long periods, in burn diseases, by V. P. Keshevaya and others.

HERALD OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, 1962, VOL. 17, NO. 5: SELECTED ARTICLES. 16 Apr 63 [66]p. (refs. omitted). FTD-TT-62-1097.
Order from OTS or SLA $6.60 63-19310

Unedited rough draft trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962 [v. 17] no. 5, p. 24-38, 47-52, 64-68, 93-101.

DESCRIPTORS: *Medicine, Medical research, Biology, Scientific organizations, *Pituitary gland, *Adrenal glands, *Immunology, *Infections, Toxins and antitoxins, *Radiation effects, Radiation sickness, Chemotherapy, Communicable diseases, Antibiotics, Stimulation, Adaptation (Physiology), Physiology, Anaerobiology, *Phosphorylation.
Contents:
The role of the hypophyseal-adrenal system in immunological and infection processes, by V. I. Ioffe and L. P. Kopytovskaya
Disruptions of natural immunity in irradiated animals and methods of stimulating it, by V. L. Troitskii
The influence of chemotherapeutic agents on the protective functions of the organism, by Kh. Kh. Planel'es
Stimulation of the protective functions of the organism with physical agents, by A. N. Obrosov and others
The role of anaerobic and oxidative phosphorylation processes in the protective functions of the organism, by S. E. Severin.

SOVIET REPORTS ON SPACE MEDICINE AND BIOLOGY. 30 Apr 63, 96p. 21 refs. JPRS: 18985.
Order from OTS $2.25 63-21723

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963, v. 28, no. 1, p. 15-39, 138-145, ##152-156.
##Another trans. is available from OTS $0.50 as 63-21725, JPRS-18994, 30 Apr 63, 8p.

DESCRIPTORS: *Space medicine, Biology, Physiology, *Space biology, *Cardiovascular system, *Respiratory system, Animals, Rockets, Acceleration tolerance, Weightlessness, Conferences, Aviation medicine, *Satellites (Artificial), Exobiology, Radiobiology, Closed-cycle ecological systems.

Contents:
Experimental studies in cosmic physiology, by P. V. Vasil'ev and others
Reactions of the cardiovascular and respiratory systems of animals during flights in hermetic cabins of rockets up to an altitude of 212 Km, by I. I. Kas'yan
European Congress on Aviation and Space Medicine (no. 10) by A. A. Gyurdzhian and A. V. Eremin
##Session of the department of biological sciences of the Academy of Sciences USSR devoted to the 5th anniversary of the launching of the 1st artificial earth satellite, by G. P. Mikhailovskii.

STUDIES IN BIOPHYSICS. 23 Apr 63, 37p.
JPRS: 18854.
Order from OTS $1.00 63-21651

Trans. of Priroda (USSR) 1963 [v. 52] no. 1, p. 3-15, 54-60, 100-101.

DESCRIPTORS: *Biophysics, *Satellite vehicle research, Sounding rockets, *Upper atmosphere, Density, Pressure, Chemical elements, *Ionosphere, *Van Allen radiation belt, Plasma physics, *Cosmic rays, *Terrestrial magnetism, Moon, *Solar radiation, *Meteorites, *Cells (Biology), *Respiration, Energy conversion, Anaerobiology, Glycolysis, Fermentation, *Adenosine phosphates, Phosphorylation, *Microsomes, *Insulin, *Ultrasonic radiation, Radiation effects, *Hyperglycemia.

Contents:
Space physics, by G. A. Skuridin
Respiration and conversion of energy in the living cell, by Kotel'nikova
Insulin and ultrasound, by I. E. El'piner and L. I. Stekol'nikov.

THORACIC SURGERY, 1963 [VOL. 5] NO. 1: [SELECTED] TRANSLATIONS. 6 May 63, 57p. 70 refs.
JPRS: 19044.
Order from OTS $1.50 63-21744

Trans. of Grudnaya Khirurgiya (USSR) 1963 [v. 5] no. 1, p. 8-18, 25-34, 116-128.

DESCRIPTORS: *Thorax, *Surgery, *Heart, *Cardiovascular system, Nervous system, *Anesthesia, Mechanical organs.

Contents:
Experience with extracorporeal circulation in open heart surgery, by P. A. Kupriyanov and others
The state of the nervous system of patients operated upon with the use of extracorporeal circulation, by G. A. Akimov and others
Peculiarities of anesthesia and of the anesthesiologist's work during operations with extracorporeal circulation, by Yu. N. Shanin and others
Anesthesiological problems in open-heart surgery, by S. A. Gadzhiev and others.

Baevskii, R. M.
FUNDAMENTALS OF PRACTICAL BALLISTO-CARDIOGRAPHY. 30 Apr 63, 148p. 129 refs. JPRS: 18967.
Order from OTS $3.00 63-21713

Trans. of mono. Osnovy Prakticheskoi Ballistokardiografii, Moscow, 1962, 173p.

DESCRIPTORS: *Ballistocardiography, Heart, *Cardiography, Medical equipment, Classification, Dynamics, Extremely low frequency, Vibration, Biophysics, Recording systems, Seismic waves, Respiration, Age, *Cardiovascular system, Physiology, *Atherosclerosis, Arteries, Muscles, *Diseases, Membranes (Biology), *Surgery, *Pregnancy, Therapy, Health resorts, Recreation, *Aviation medicine, Public health.

Contents:
Brief historical outline on the development of ballisto-cardiography
Physical fundamentals of ballisto-cardiography
Techniques and methods of ballisto-cardiography
Normal ballisto-cardiogram and its variations
Analysis and clinical BKG evaluation
BKG changes during various affections
Application of ballisto-cardiography in surgery, obstetrics, physiotherapy, the science of health resort therapy, athletic and aviation medicine
Mass ballisto-cardiography

Bakulov, I. A.
PRACTICAL EXERCISES IN EPIZOOTOLOGY AND MICROBIOLOGY: SELECTED ARTICLES. 8 May 63, 74p. JPRS: 19115.
Order from OTS $2.00 63-21790

Trans. of mono. Prakticheskie Zanyatiya po Epizootologii s Mikrobiologiei, Moscow, 1962, exercises 7-9, 12-14, 16-17, 21-24.

DESCRIPTORS: Epidemiology, *Microorganisms, Culture media, *Veterinary medicine, *Immunology, *Communicable diseases, Drugs, *Antibiotics, *Bacillus anthracis, Diseases, *Foot and mouth disease, Diagnosis, Swine, Anaerobiology, *Brucella, Medical equipment.

Contents:
Technique of streaking microbes on nutrient media and cultivation methods
A study of cultures made independently by the students at the previous exercise
Rules for working with laboratory animals
Biologicals used in veterinary practice
Organization of mass treatment of animals, mastery of inoculation technique
The use of biologicals and antibiotics for the treatment of animals with infectious diseases
Apparatus and mechanized equipment used for disinfection
Anthrax. Diagnosis of the disease
Anthrax. Control measures
Anthrax. Vaccination
Anaerobic infections (bradzot, tetanus, necrobacillosis) (Technique of laboratory examination)
Brucellosis. Allergic diagnosis of the disease and vaccination of animals

Foot-and-mouth disease: vaccination of animals against foot-and-mouth disease
Infectious diseases of swine
The use of biological and antibiotics for infectious diseases of swine.

Mikhailovskii, G. P.
MEETING HONORING THE FIRST ARTIFICIAL EARTH SATELLITE. 30 Apr 63, 8p. JPRS: 18994.
Order from OTS $0.50 63-21725

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963 [v. 28] no. 1, p. 152-156.

DESCRIPTORS: *Satellites (Artificial), Space biology, Space medicine, Space environmental conditions

Ognev, B. V. and Novinskii, G. D.
MEDICINE AND PHYSICS (Meditsina i Fizika). 6 May 63, 125p. 90 refs. JPRS: 19043.
Order from OTS $2.75 63-21743

Trans. of [Vsesoyuznoe Obshchestvo po Rasprostraneniyu Politicheskikh i Nauchnykh Znanii. Seriya 8]: Biologiya i Meditsina (USSR) 1962 [no. 19] p. 1-64.

DESCRIPTORS: *Medicine, Physics, Science, Bionics, *Cybernetics, *Communication theory, *Telemeter systems, Space biology, *Electron optics, *Polymers, *Materials, *Illumination, *Medical equipment, Anatomy, *Diagnosis, Television equipment, *Luminescence, *Electronic equipment, Stimulation, *Ultrasonic radiation, Very high frequency, *Asymetric bodies, *Nuclear energy, *Nervous system, *Mechanical organs, *Machines, Brain, Reasoning.

Contents:
Progress of medicine in connection with development of related sciences
Cybernetics and bionics
Information theory
Radiotelemetry
Electron optics
Polymeric materials
Illuminating devices, television, luminescence
Electronic devices. Stimulators
Ultrasound
Mirror effect (Asymmetry)
Atomic energy
Cybernetics and medicine
Birth of science
Mysteries of control of organism
Lifeless models of living processes
Diagnosis by machine
Cybernetics, thought and creation

Tokin, B. P. and Gorbunova, G. P.
HOW TO OBLIGE THE PEDICEL OF HYDRA FUSCA TO REGENERATE A WHOLE HYDRA tr. by Zelda D. Knowles. Rept. 2 of Problems of the Ontogenesis of the Cell. 8Aug 50, 29p. 13 refs.
Order from OTS or SLA $2.60 62-23844

Trans. of Biologicheskii Zhurnal (USSR) 1934, v. 3, no. 2, p. 294-306.

DESCRIPTORS: Aquatic animals, Marine biology; *Regeneration, Growth, Morphology, *Tissues (Biology), Cells (Biology), Temperature, Nutrition, *Genetics, *Transplantation.

Anatomy and Physiology

Kedrov, A. A., Naumenko, A. I., and Degtyareva, Z. Ya.
MECHANISM OF VENOUS OUTFLOW FROM THE CRANIUM (O Mekhanizme Venoznogo Ottoka Krovi iz Cherepa). May 63 [9]p. 10 refs. NASA Technical Trans. F-163.
Order from OTS $0.50 63-11594

Trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1957 [v. 44] no. 9, p. 10-14.

DESCRIPTORS: *Brain, *Cardiovascular system, Arteries, Electric currents, Resistance (Electrical), *Blood pressure, Plethysmography, Carbon dioxide, Cerebrospinal fluid

Data obtained from investigations on six canine subjects indicated that the registration of pulse acceleration in the outflow of blood from cranial sinuses can be used as a method of investigating intercranial circulation. This method has the advantage that it does not require opening the cranial cavity; thus, hermetic conditions need not be disturbed. (NASA abstract)

Kedrov, A. A. and Naumenko, A. I.
SOME CHARACTERISTICS OF THE REGULATION OF INTRACRANIAL CIRCULATION (O Nekotorykh Osobennostyakh Regulatsii Vnutricherpnogo Krovoobrashcheniya). Apr 63 [16]p. 14 refs. NASA Technical Trans. F-161; N63-14431.
Order from OTS $0.50 63-11607

Trans. of Fiziologicheskii Zhurnal SSSR, 1951, v. 37, no. 4, p. 431-438.

DESCRIPTORS: *Brain, *Cardiovascular system, *Blood circulation, Bioelectronics, *Plethysmography, Nerves, Stimulation, Electric currents, Blood vessels, Arteries, Anoxia

Electroplethysmography can be used to study extracranial and intracranial circulation in animals. Stimulation of the central ends of sympathetic and vagus nerves results in changes in tonus of extracranial and intracranial vessels. The effect on vasomotor responses is more sharply expressed in relation to extracranial vessels. When asphyxia is induced, tonus definitely decreases, incomparably more sharply in intracranial circulation. Because of their quantitatively differing reactions, it is difficult to draw conclusions concerning the intracranial vessels from investigations of the extracranial vessels. Clamping the common carotid artery on one side has a comparatively slight effect on intracranial circulation. (NASA Abstract)

Moskalenko, Yu. E.
CEREBRAL PULSATION IN THE CLOSED CRANIAL CAVITY (O Pul'satsii Mozga v Zakrytoi Polosti Cherepa). Apr 63 [19]p. 27 refs. NASA Technical Trans. F-158; N63-14364.
Order from OTS $0.50 63-11604

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1961 [v. 26] no. 4, p. 620-629.

DESCRIPTORS: *Brain, *Cerebrospinal fluid, Pressure, Cardiovascular system, Spinal column, Blood pressure, Plethysmography, Bioelectronics, Photographic analysis, Piezoelectric effect.

Cerebral pulsation does exist in the closed cranial cavity. This pulsation is expressed as periodic fluctuations of the cerebrospinal fluid pressure of the order of 1 cm H_2O and back-and-forth movements of cerebrospinal fluid between the cavities of the cranium and the spine. Cerebral pulsation cannot be detected by the method of contrast roentgenoscopy or by the "transparent skull" method on account of their low sensitivity. Transmission of the pulse wave from the cerebral arteries to the veins is accomplished by means of cerebrospinal fluid pressure, bypassing the capillary route, so that capillary circulation remains smooth and uniform. (Author)

Moskalenko, Yu. E. and Naumenko, A. I.
ON THE THEORY OF ELECTROPLETHYSMOGRAPHY (K Teorii Metodiki Elektropletizmografii). May 63 [13]p. 10 refs. NASA Technical Trans. F-157.
Order from OTS $0.50 63-11603

Trans. of Fiziologicheskii Zhurnal SSSR, 1956, v. 42, no. 3, p. 312-316.

DESCRIPTORS: *Plethysmography, Bioelectronics, Electrical conductance, *Brain, Cardiovascular system, Blood volume, *Cerebrospinal fluid, Mathematical analysis

The extent of the changes in the electrical conductivity of the brain, in response to changes in the tonus of the brain vessels, was estimated by means of calculations in which the brain and its vascular and arachnoid members are approximately represented in a geometrical form convenient for mathematical analysis. On the basis of the computations it was possible to estimate the relative changes in the amount of cerebrospinal fluid in the cranial cavity. (NASA abstract)

Sirotina, M. F. and Adamenko, M. P.
CHANGES IN THE MORPHOLOGICAL COMPOSITION OF THE BLOOD IN UNDERWATER SUBMERSION OF ATHLETES [AND] RESTORATION OF CIRCULATION AND RESPIRATION IN DOGS REVIVED AFTER LONG TERMS OF CLINICAL DEATH DUE TO ELECTRIC TRAUMA. 23 Apr 63, 19p. 24 refs. JPRS: 18855.
Order from OTS $0.75 63-21652

Trans. of Fiziologichnyi Zhurnal (USSR) 1963 [v. 9] no. 1, p. 77-88.

DESCRIPTORS: *Blood, Morphology, Underwater, Diving, Leukocytes, Lymphocytes, Erythrocytes, *Cardiovascular system, Respiration, Dogs, *Clinical death, Traumatic shock, Mechanical organs, Exercise

Steffen, H.
EFFECT OF COFFEE ON THE PROTEOLYSIS IN THE STOMACH OF HEALTHY EXPERIMENTAL SUBJECTS. [1963] 7p.
Order from ATS $11.50 ATS-72Q67G

Trans. of [die] Med[izinische] Welt (West Germany) 1962, no. 14, p. 763-765.

DESCRIPTORS: *Coffee, *Stomach, Biochemistry, Hydrolysis, *Proteins.

Yazdovskii, V. I., Yuganov, E. M., and Kas'yan, I. I.
POSTURAL REFLEXES IN INTACT ANIMALS UNDER CONDITIONS OF WEIGHTLESSNESS (Ustanovichnyi Refleks Intaktnykh Zhivotnykh v Usloviyakh Nevesomosti). Mar 63 [9]p. 11 refs. NASA Technical Trans. F-130; N63-13222.
Order from OTS $0.50 63-11597

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1960 [v. 25] no. 5, p. 762-767.

DESCRIPTORS: *Posture, *Reflexes, *Weightlessness, Gravity, Rats, Mice, Adaptation (Physiology) *Space biology, Motor reactions

Experiments were conducted on two albino rats and two albino mice to study their postural reflexes under conditions of alternately increased and decreased gravity and to determine the time required for development of adaptive reactions in the weightless state. (NASA abstract)

Biochemistry

Eggerer, H., Stadtmann, E. R. and others.
THE MECHANISM OF THE REARRANGEMENT OF METHYLMALONYL CoA TO SUCCINYL CoA CATALYZED BY COBAMIDE COENZYME (Zum Mechanismus der durch Cobaltamin-Coenzym Katalysierten Umlagerung von Methylmalonyl-CoA in Succinyl-CoA). [1961] [19]p. 22 refs.
Order from SLA $1.60 61-20523

Trans. of Biochemische Zeitschrift (West Germany) 1960, v. 333, p. 1-9.

DESCRIPTORS: Biochemistry, *Succinates, *Malonic esters, Methyl radicals, Enzymes, *Coenzymes, *Molecular isomerism, *Isomerases, Thiols, Esters, *Vitamin B complex, Carboxyl radicals, *Oxidation-reduction reactions, Propionic acids, Animals, Bacteria.

The isomerization of methyl-malonyl CoA to succinyl (Biological Sciences--Biochemistry, TT, v. 10, no. 1) CoA was done by participation of Barkers Cobamide-coenzyme. In studying this reaction it was found in extracts of Propionibacterium shermanii that $2^{14}C$ Methyl-Malonyl CoA resulted in 3-^{14}C-Succinyl CoA and therefore the isomerization took place by migration of the thioester carboxyl. A reaction mechanism that proceeded by radicals and included an oxydoreduction between the substrate and coenzyme was discussed. (Author)

Gorkin, V. Z.
ON THE NATURE OF CATALYTIC SITES OF AMINE OXIDASES: ROLE OF ZINC IN THE ACTION OF THE AMINE OXIDASE OF BLOOD SERUM (Rol' tsinka v Deistvii Aminoksidazy Syvorotki Krovi). 12 Sep 62, 11p. 28 refs. NIH no. 9-9-62.
Order from OTS or SLA $1.60 62-33364

Trans. of Voprosy Med[itsinskoi] Khim[ii] (USSR) 1961, v. 7, no. 6, p. 632-638.

DESCRIPTORS: Catalysis, *Amines, *Oxidases, *Zinc, *Blood serum, Cattle, Antioxidants, Enzymes, Vitamin B complex.

The activity of the amine oxidase of blood of a bovine animal (spermine oxidase) is inhibited by a number of complexforming compounds. Cysteamine, orthophenanthroline, diethyl dithiocarbamate, and 8-oxyquinoline show an especially considerable inhibiting effect. In the course of the purification of the spermine oxidase, a direct proportionality is discovered between the specific activity of the preparations and the zinc content per unit of protein weight. Zinc is the sole microelement present in purified preparations of spermine oxidase. Its content in the most purified preparations of this enzyme consists of 0.1-0.2% in relation to the total content of the protein. At dialysis of the preparations of spermine oxidase against solutions of ethylene diaminetetra acetate a reduction is observed of the enzymatic activity with simultaneous reduction of the zinc content in the enzyme preparations. Addition of zinc ions restores the activity of dialyzed preparations of spermine oxidase. The absorption spectra of solutions of purified preparations of spermine oxidase do not disclose the absorption maxima characteristic of derivative vitamins B_6 or B_2. (Author)

Loukshina, N. I. and Khachatrian, G. S.
ON THE EFFECT OF BENACITIZINE UPON THE CAT BRAIN AND LIVER MONOMINE OXIDASE ACTIVITY [AND] GALACTOLIPIDS (CEREBROSIDES) OF RAT BRAIN IN DIFFERENT STATES OF BRAIN ACTIVITY. [1962] [1]p.
Order from OTS or SLA $1.10 62-20322

Partial trans. (summaries) of Voprosy Med[itsinskoi] Khimii (USSR) 1962, v. 8, no. 3, p. [256]-263.

DESCRIPTORS: Drugs, *Brain, *Liver, *Cats, *Amines, *Oxidases, Hyperglycemia, Lipids.

The effect of benactizine upon brain and liver monoamine oxidase activity in cats was studied. After intramuscular injections of the drug (10 mg/kg) the monoamine oxidase activity in midbrain was decreased by 21%, that of liver by 19%; in optical area of brain cortex the enzymatic activity was found under the conditions of this experiment to be increased by 20%. Benactizine (4.10^{-4}M) inhibits monoamine oxidase activity in vitro by 15% in midbrain and by 11% in optical area of brain cortex. At the concentration 4.10^{-3}M the inhibition was 41 and 40%, respectively. (Loukshina) The galactolipids (cerebrosides) content in brain tissue was found to be 1.49±0.02% in normal rats. In alimentary and conditioned alimentary hyperglycemia brain galactolipids level increased up to 2.33±0.02% and 2.1±0.05%, respectively. In the states accompanied by inhibition of cortical activity the galactolipids content in brain tissue was decreased (1.35±0.03%). (Khachatrian) "Report quoted in its entirety".

Vastagh, Gabor.
CONTRIBUTION TO THE PROBLEM OF THE STABILITY OF PREPARATIONS CONTAINING VITAMIN A (Beiträge zur Frage der Haltbarkeit von Vitamin-A-Präparaten). [1962] 8p. 3 refs.
Order from SLA $1.10 63-10537

Trans. of Pharmaz[eutische] Zentralhalle f[ür] D[eu]tschl[an]d (Germany) 1942, v. 83, no. 41, p. 481-484.

DESCRIPTORS: *Vitamin A, Stability, *Oxidation, Fish oils, Fatty acids, Esters, Absorption, Colloids, Storage, Alcohols.

Zachau, H. G. and others.
FRACTIONATION OF SOLUBLE RIBONUCLEIC ACID. [1962] 6p. 8 refs.
Order from SLA $1.10 63-10792

Trans. of Biochim[ica et] Biophys[ica] Acta (Netherlands) 1961, v. 53, p. 221-223.

DESCRIPTORS: *Distillation, *Ribonucleic acids, Solubility, *Chromatographic analysis, Enzymes, Amino acids, Biochemistry, Chemical analysis.

Botany

Braun, Helmut J.
SPRING-TIME WATER DISPLACEMENT IN TREES AND GRAFT CIONS. [1962] 15p. (figs. omitted) 17 refs.
Order from SLA $1.60 62-20471

Trans. of Zeitschrift für Botanik (West Germany) 1961, v. 49, no. 1, p. 96-109.

DESCRIPTORS: *Trees, Physiology, *Absorption, Water, Rhythm (Biology), *Transplantation, Osmotic pressure, Water entry.

In early spring, from mid March to the beginning of new growth, a water displacement takes place in the sprout axes of deciduous trees. First water is transposed in radial direction outward from the wood, whereby the water content of the bark and buds is greatly increased. As a result, water is slowly shifted upward within the wood substance from the lower portions of the sprout axes or from the roots. This causes the water content of the entire sprout axes to increase and the trees come into sap. The same takes place also in cut-off sprout axes, for example, in graft cions; this, however, involves a progressive gradual discharge of water from the wood substance from the inside out and from the bottom up. Root pressure certainly does not play a part in water displacement. The mechanism of this water displacement is likely to be of osmotic nature, based on the hydrolysis of the starch stored in the bark and bud zone. The processes during spring-time water displacement are evidenced as a mobilization phase occurring between the rest period and the vegetation period. The significance of the water displacement for the grafting method is discussed. (Author)

Kats, N. Ya.
PHYTOCOENOSIS AND SPECIES (Fototsenoz i Vid) tr. by B. Ribush. [1962] [27]p. (foreign text included) 21 refs. [CSIRO] Trans. no. 5755.
Order from OTS or SLA $2.60 63-13605

Trans. of M[oskovskoe] O[bshchestvo] Isp[ytatelei] Prirody. [Byulleten']. Otd[el] Biologi[cheskii] (USSR) 1948, v. 53, no. 2, p. 67-79.

DESCRIPTORS: *Plants (Botany), Ecology, Geography, Distribution, Morphology, Viability, *Taxonomy, *Genetics, Geology, Mathematical analysis, Microorganisms.

Rizet, Georges, Lissouba, Pascal, and Mousseau, Jean.
THE MUTATIONS OF ASCOSPORES IN THE ASCOMYCETE ASCOBOLUS IMMERSUS AND THE ANALYSIS OF THE FINE STRUCTURE OF THE GENES (Les Mutations d'Ascospores chez l'Ascomycete Ascobolus Immersus et l'Analyse de la Structure Fine des Genes). [1962] [42]p. 18 refs.
Order from SLA $4.60 62-14086

Trans. from Société Française de Physiologie Végétale. Bulletin, 1960, v. 6.

DESCRIPTORS: *Mutations, *Spores, Fungi, Analysis, Morphology, *Genes, Genetics, Chromosomes.

Shardakov, V. S.
DETERMINATION OF THE ABSORPTIVE POWER OF LEAVES, USING THE GRADING TUBE METHOD (Opredelenie Sosushchei Sily List'ev Rastenii Metodom Gradientnoi Trukbi). [1962] [7]p. (foreign text included) 5 refs. [CSIRO] Trans. no. 5685.
Order from OTS or SLA $1.10 63-15259
Trans. of Akademiya Nauk Uzbekskoi SSR, Tashkent. Doklady, 1951, no. 12, p. 33-35.

DESCRIPTORS: *Absorption, Pipes, Kerosene, Bromine compounds, Benzenes, Alcohols, *Plants (Botany).

Medical Specialties and Equipment

Fritzsch, H.
DESCRIPTION OF MODEL 6 NEK-1 F 2 SIX-CHANNEL ELECTROCARDIOGRAPH: 6-CHANNEL ELECTRO-CARDIOGRAPH (6 NEK-1 F 2) MODERN MULTIPURPOSE RECORDER FOR BIOPHYSICAL PARAMETERS.
23 Apr 63, 13p. JPRS: 18859.
Order from OTS $0.50 63-21653

Trans. of Feingeräte Technik (East Germany) 1963 [v. 12] no. 2, p. 59-64.

DESCRIPTORS: *Electrocardiography, *Medical equipment, Diagnosis, Recording systems, Biophysics, Acoustic equipment, Magnetic tape, Input-output devices, Operation, Design.

Wagner, R.
SIMPLIFIED METHOD FOR THE CONTINUOUS BLOODLESS RECORDING OF THE BLOOD PRESSURE IN MAN, REPT. 3. [1962] 18p. (figs. [refs.] omitted).
Order from SLA $1.60 63-10588

Trans. of Zeits[chrift für] Biol[ogie] (West Germany) 1960, v. 112 [no. 1] p. 67-84.

DESCRIPTORS: Medical equipment, Measurement, *Blood pressure, Man, *Manometers, Medical examination.

Microbiology

Carlson, Sven.
USE OF ELECTRIC CURRENTS IN MICROBIOLOGY: A SURVEY. [1962] 6p. (refs. omitted).
Order from SLA $1.10 63-10532

Trans. of Zentralblatt für Bakteriologie[Parasitenkunde und Infektionskrankheiten. Abt.] 1. [Originale] (East Germany) 1960, v. 177, p. 269-278.

DESCRIPTORS: *Electric currents, Microbiology, *Cells (Biology), *Microorganisms, Bacteria, Electrical conductance, Chlorination, Milk, Preservation, Fermentation, Electrotherapy.

Zhdanov, V. M.
THE MECHANISM OF VIRUS PENETRATION INTO THE CELL (Mekhanizm Pronikaniya Virusa v Kletku).
23 Jan 63, 4p. 3 refs. NIH no. 1-31-63.
Order from OTS or SLA $1.10 63-15703

Trans. of Priroda (USSR) 1962 [v. 51] no. 12, p. 94-95.

DESCRIPTORS: *Viruses, Cells (Biology), Enzymes, Microorganisms, Tracer studies, Nucleic acids, Sensitivity, *Cytochemistry, Nucleoproteins, Biochemistry, Penetration.

Neurology and Psychiatry

JOURNAL OF PATHONEUROLOGY AND PSYCHIATRY, 1963, [VOL. 63] NO. 1: [SELECTED] TRANSLATIONS.
7 May 63, 43p. 36 refs. JPRS: 19085.
Order from OTS $1.25 63-21771

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1963 [v. 63] no. 1, p. 3-18 and 92-95.

DESCRIPTORS: *Neurology, *Psychiatry, *Pathology, Electrodes, *Brain, Muscles, Motion, Bioelectronics, *Diseases, *Nerves, Waxes, Psychoses, Electromyography, Chemotherapy.

Contents:
The use of multiple electrodes implanted in the subcortical structures of the human brain for the treatment of hyperkinesis, by N. P. Bekhtereva and others
On the bioelectrical activity of the brain of patients with progressive muscular dystrophy, by S. A. Malnikov and others
The treatment of patients suffering from lumbosacral radiculitis with ozocerite under electromyographic control, by M. Z. Kal'kaev
Experience with using lithium iodide for the treatment of some psychotic states, by K. V. Mosketi and others

Volokhov, A. A.
THE EVOLUTION OF FUNCTIONS AND METABOLIC PROCESSES OF THE HIGHER CENTERS OF THE CENTRAL NERVOUS SYSTEM. [1962] 13p.
Order from OTS or SLA $1.60 62-20330

Trans. of Zh[urnal] Vysshei Nervnoi Deyatel'nosti (USSR) 1960, v. 10, no. 6, p. 933-938.
Another trans. is available from OTS or SLA $2.60 as 62-13895 [1961] 22p.

DESCRIPTORS: *Evolution, Physiology, Growth, *Metabolism, *Nervous system, Cerebral cortex, Conferences.

For abstract see Technical Translations 8: 198, 1962.

Pathology

CADAVEROUS BONE MARROW AND SEROLOGICAL RESPONSE TO THERMAL BURNS. 9 Apr 63 [25]p. 56 refs. JPRS: 18634.
Order from OTS $0.75 63-21552

Trans. of #Problemy Gematologii i Perelivaniya Krovi (USSR) 1963, v. 8, no. 2, p. 28-34 and 37-44.

DESCRIPTORS: *Bone marrow, Transplantation, Blood serum, *Burns, Antigens, *Immunology, *Proteins, Hydrolysis, Diseases.

Contents:
A new method of preparing cadaverous bone marrow intended for transplantation, by A. G. Fedotenkov and others
On serological activity during thermal burns, by P. N. Kosyakov and others
The status of certain immunobiological properties of blood in patients with burn diseases during transfusion of protein hydrolyzates, by M. M. Petrov.

HERALD OF THE ACADEMY OF MEDICAL SCIENCES USSR, 1963, VOL. 18, NO. 2. 29 Apr 63, 140p. JPRS: 18942.
Order from OTS $2.75 63-21698

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 2.

DESCRIPTORS: *Medical research, *Medicine, *Soils, *Public health, Population, Adaptation (Physiology), Neurology, *Fatigue (Physiology), Children, Ionization, *Physical fitness, *Poisoning, Temperature, Exercise, Age, Morphology, *Muscles, *Heart, *Hormones, *Vitamin B complex, *Ulcers, *Diseases, Cardiovascular system, Medical research

Contents:
The problem of the concept of "healthy soil", by N. I. Khlebnikov
Functional state and morbidity of the population during acclimatization to the Far North, by I. S. Kandror and E. I. Soltyskii
Disorders of higher nervous activity and control of these disorders during mental fatigue in school children, by L. N. Shustruyskaya
Highly ionized air as a factor increasing physical efficiency, by A. A. Minkh
The combined effect of thio poisons and high air temperature on the body, by G. Kh. Shakhbazyan and I. V. Savitakii
Principles of medical supervision of polytechnic school training, by S. M. Grombakh
Hygienic problems in the building of new types of schools, by K. I. Luchina
The main stages in the development of russian gerontology, by N. N. Gorev
Some biomorphological rules and regulations of aging of the skeletal musculature, by S. I. Fudel'-Osipova
Neurohumoral regulation of function during aging of the Organism, by V. V. Frol'kis
Experimental myocardial infarction in animals of different ages, by L. V. Kostyuk
The utilization of vitamins B_6 and B_{12} in the comprehensive therapy of gastric and duodenal ulcers, by S. M. Bremener and others
Soviet-Romanian scientific session on cardiovascular diseases (no. 2) by E. V. Shmidt
Methods of hygienic research, by Z. K. Mogilevich: A review of the book by A. A. Minkh

HERALD OF THE ACADEMY OF MEDICAL SCIENCES USSR, 1963, VOL. 18, NO. 3. 30 Apr 63, 126p. JPRS: 18974.
Order from OTS $2.75 63-21716

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 3, p. 1-88.

DESCRIPTORS: *Medical research, *Medicine, *Cancer, *Viruses, *Immunology, Ecology, Ionization, *Radiation effects, Radioactive isotopes, *Chemotherapy, *Antibiotics, Epidemiology, *Hormones.

Contents:
International Cancer Congress (no. 8): survey of material
The latest in tumor virology and immunology, by G. I. Abelev and I. S. Irlin
Mechanisms of action of chemical carcinogens, by V. I. Gel'shtein
Carcinogenic agents in man's environment and their control, by L. M. Shabad
The blastomogenic effect of ionizing radiation, by M. V. Svyatukhin
Hormones and cancer, by N. I. Lazarev and N. D. Lagova

Chemotherapy of malignant tumors, by N. I. Perevodchikova and others
Antineoplastic antibiotics, by M. M. Maevskii
Radiation therapy of cancer, by M. M. Nivinskaya
Epidemiology of cancer, by O. V. Svyatukhina
The problem of premalignant states, by V. S. Turusov
Carcinoma in situ of the cervix, by V. F. Savinova

Antonov, A. M.
SPONTANEOUS KIDNEY TUMORS IN MONKEYS (MACACUS RHESUS). [1963] 4p.
Order from ATS $7.00 ATS-59Q67R

Trans. of Vopr[osy] Onkol[ogii] (USSR) 1956, v. 2 [no. 2] p. 198-201.

DESCRIPTORS: *Kidneys, *Neoplasms, Primates.

Böhme, G. and Schneider, H. G.
THE PATHOSOPHYSIOLOGY OF THE PERSON WITHOUT LARYNX IN REGARD TO THE QUALITY OF HIS SPEECH. [1962] 9p. (figs. omitted) 16 refs.
Order from SLA $1.10 63-10710

Trans. of Zeitschrift für Laryngologie, Rhinologie, Otologie [und Ihre Grenzgebiete] (West Germany) 1960, v. 39, Aug, p. 512-520.

DESCRIPTORS: *Larynx, *Speech disorders, Throat, Physiology, Anatomy, Speech, *Therapy, Esophagus, Adjustment (Psychology)

Ciurlo, E. and Ottoboni, A.
THE ALARYNGEAL VOICE OF THE LARYNGECTOMIZED (La Voce Alaringea dei Laringectomizzati). [1962] 8p. (figs. omitted) 46 refs.
Order from SLA $1.10 63-10719

Trans. of Minerva Otorinolaringologica (Italy) 1960, v. 10 [Mar] p. 69-75.

DESCRIPTORS: *Larynx, Surgery, Excision, *Speech, Education, Otorhinolaryngology, *Esophagus, Stomach, Adaptation (Physiology), Radiography, Motion pictures, Throat.

Heilmeyer, L.
SOME RECENT LIFE-SAVING METHODS IN INTERNAL MEDICINE. 4. IRON REMOVAL IN HEMOCHROMATOSIS (Einige Neuere Lebensrettende Methoden in der Inneren Medizin). Jan 63, 3p. (figs. omitted).
Order from SLA $1.10 63-10717

Trans. of Münch[ener] Med[izinische] W[ochen]schr[ift] (West Germany) 1962, v. 104, 26 Jan, p. 161.

DESCRIPTORS: *Medicine, *Iron compounds, *Diabetes *Chelate compounds, *Blood.

Hess, R. and Stäubli, W.
PATHOGENESIS OF EXPERIMENTAL AORTIC LIPOIDOSIS OF RATS: ENZYME-HISTOCHEMICAL AND ELECTRONMICROSCOPIC OBSERVATIONS (Die Pathogenese der Experimentellen Aortalipoidose der Ratte: Enzymhistochemische und Elektronenmikroskopische Beobachtungen). Feb 62, 2p. 2 refs.
Order from SLA $1.10 63-10661

Trans. of Pathologia et Microbiologia (Switzerland) 1962, v. 25, p. 340-342.

DESCRIPTORS: Pathology, *Rats, *Aorta, Lipids, *Arteriosclerosis, Enzymes, Cytochemistry, Electron microscopy, Diet.

Lipets, V. Ya.
STRUCTURE AND PATHOLOGY OF ELASTIC FIBERS. 28 Mar 63 [11]p. 27 refs. NIH no. 3-40-63.
Order from OTS or SLA $1.60 63-19110

Trans. of Arkhiv Patologii (USSR) 1960, v. 22, no. 6, p. 48-54.

DESCRIPTORS: Morphology, *Connective tissues, *Fibers, Diseases, Separation, Dilation, Biological stains, Primates.

Elastic fibers of a loose connective tissue obtained from 12 macacusrhesus and from some other animals were investigated by the method of film preparations. Considerable changes were revealed in 4 monkeys affected with dysentery and pneumonia involving mainly defibrillation of the elastic fibrils and formation of diffuse and varicose swellings associated with the process of defibrillation. In conformity with the literature data on the structure of elastic fibers these changes were regarded as a manifestation of elastolysis. The varicously swollen areas of the fibers (lumps) changed their tinctorial properties in the same way as described by Unna during change-over of elastin to elacin. These formations in the tissues take a long time to resolve. Evidently they appear as a result of disturbed process of elastolysis. (Author)

Masson and Noix.
RADIOCINEMATOGRAPHY OF THE NORMAL AND PATHOLOTIDAL ESOPHAGUS. [1962] 3p.
Order from SLA $1.10 63-10714

Trans. of Annales d'Oto-Laryngologie (France) 1955, v. 72, no. 11/12, p. 928-930.

DESCRIPTORS: *Esophagus, *Radiographic analysis, *Motion picture photography.

Schwab, W.
X-RAY CINEMATOGRAPHIC INVESTIGATIONS IN SUBSTITUTE SPEECH AFTER A LARYNGECTOMY. [1962] 4p.
Order from SLA $1.10 63-10706

Trans. of Acta Oto-Rino-Laringologica Ibero-Americana (Spain) 1957, v. 8, no. 2, p. 270-273.

DESCRIPTORS: X-rays, *Motion pictures, Radiography, *Larynx, Surgery, Excision, Otorhinolaryngology, *Speech, Throat, Esophagus.

Siroky, J.
RESULTS OF REEDUCATION OF THE VOICE AFTER LARYNGECTOMY. [1962] 10p. (figs. omitted) 16 refs.
Order from SLA $1.10 63-10709

Trans. of Zeitschrift für Larynologie, Rhinologie, Otologie [und Ihre Grenzgebiete] (West Germany) 1960, v. 39, Aug, p. 504-512.

DESCRIPTORS: *Larynx, Surgery, Excision, *Speech, *Esophagus, Otorhinolaryngology, Education, Adaptation (Physiology), Throat.

Smirnova, A. M., Rapoport, Zh. Zh., and Pankova, Ya. V.
ON THE CONTENT OF C-REACTIVE PROTEIN IN THE BLOOD OF CHILDREN AFFECTED BY RHEUMATISM [AND] ULTRASOUND TREATMENT OF PATIENTS SUFFERING FROM CHRONIC URTICARIA. 21 June 62 [14]p. JPRS: 14251.
Order from OTS or SLA $1.60 62-25502

Trans. of Sovetskaya Meditsina (USSR) 1962 [v. 26] no. 4, p. 53-56 and 126-128.

DESCRIPTORS: *C-reactive protein, Blood proteins, Children, *Rheumatic diseases, *Ultrasonic radiation, *Allergy, Therapy, Adaptation (Physiology).

In 67.7% of the patients, rheumatic children, C-reactive protein was found in acute attacks, and in 84.4% -- in chronic attacks. The relation of (acute phase reaction) to clinical manifestation of the disease was noted (more frequently positive, in serums of patients with marked symptoms of illness). A clear-cut parallel exists between the magnitude of erythrocyte sedimentation rate, the temperature reaction, and the presence of C-reactive protein: positive APR occurs more frequently in patients with high temperatures and high ESR. The presence of C-reactive protein is a more sensitive index of the activity of the rheumatic process than ESR and the temperature index. (Smirnova) Ultrasound, a new therapeutic device, yields very hopeful results in the treatment of chronic urticaria. It is necessary to conscientiously examine the general condition for the patients receiving US therapy, as a number of undesirable side-effects can develop during the course of treatment. (Pankova)

Vandor, F.
X-RAY EXAMINATION OF THE PSEUDOGLOTTIS OF LARYNGECTOMIZED PATIENTS. [1962] 7p. (figs. omitted) 8 refs.
Order from SLA $1.10 63-10712

Trans. of Fortschritte auf dem Gebiete der Rontgenstrahlen [und der Nuklearmedizin] (West Germany) 1955, v. 82, no. 5, p. 618-625.

DESCRIPTORS: X-rays, *Larynx, Throat, *Speech disorders, Excision.

Waltz, P. and Hausermann, M.
INVESTIGATIONS ON SMOKING METHODOLOGY. III. METHOD OF APPROXIMATION FOR THE DETERMINATION OF THE VOLUME OF SMOKE PUFFS ON THE DATA FROM SMOKER OBSERVATIONS.
Order from SLA $1.60 62-20205

Trans. of Mitteilungen aus dem Gebiete der Lebensmitteluntersuchung[en] und Hygiene (Switzerland) 1960, v. 51, no. 5, p. 325-338.
Another trans. is available from K-H $22.50 as K-H-10969-f [1962].

DESCRIPTORS: Determination, *Tobacco, *Smokes, Volume, Cigarettes, Tests.

A method is presented for the determination of the puff volume from the following data available through the observation of a cigarette smoker: cigarette brand, duration of smoking, number of puffs, and stub length. The method implies the separate experimental determination, on cigarettes of the brand concerned, of the average weight, the free-burning rate, and the relationship between the amount of tobacco consumed per puff and the puff volume. The later is done by smoking the cigarettes artificially under defined conditions. Under favourable circumstances, e.g. when the accurate weight of the cigarette smoked by the observed person is known, the method gives fairly accurate individual results. If only the cigarette brand is known, however, a large number of observations must be made in order to obtain an average value, which can be considered as representative. (Author)

Wirth, Bochum.
PHYSIOLOGICAL OPTICS, REFRACTION, ACCOMMODATION, SPECTACLE INFORMATION. Review of article Astigmatic Accommodation by I. Cotlier. 31 Aug 45, 2p.
Order from SLA $1.10 61-14146

Trans. of Zentralblatt für [die]Gesamte Ophthalmologie und ihre Grenzgebiete (Germany) 1942, v. 48, no. 8, p. 219 (article reviewed pub. in [Anales Argentinos de Oftalmologia] 1941, v. 2, p. 6-36).

DESCRIPTORS: Physiology, *Optics, *Refraction, *Eyeglasses, *Eye, Diseases, Diagnosis, Medical examination, Cornea, Ophthamology.

Pharmacology and Toxicology

METHOD FOR THE PRODUCTION OF STABLE AQUEOUS SOLUTIONS OF TYROCIDIN, GRAMICIDIN, OR TYROTRICIN. [1962] 4p.
Order from OTS or SLA $1.10 62-16249

Trans. of Danish patent 72,134, by H. Lundbeck and Co., Chemical Pharmaceutical Laboratory A/S, pat. from 1 Nov 48, issued 29 Jan 51.

DESCRIPTORS: *Antibiotics, Production, *Tyrothricin, Drugs.

The method is characterized in that there is used as solvent a quaternary ammonium compound of the type $\begin{matrix} R \\ X \end{matrix}\!>\!Q$, where R is an alkyl radical with 8-18 carbon atoms, X is an inorganic or organic acid residue, and Q is a heterocyclic group with a basic nitrogen atom in the ring, e.g. pyridine, quinoline or derivatives of the same.

Barbier, P.
RELATIONSHIP BETWEEN THE CHEMICAL STRUCTURE OF CORTICOIDS AND THEIR ANTI-INFLAMMATORY PROPERTIES (Relations entre la Structure Chimique des Corticoides et leur Propriété Anti-Inflammatoire). Paper from the Symposium on Recent Medical Biological Facts on Anti-Inflammatory Corticoids, Paris, 27 Apr 59. [1962] 14p. (formulae omitted) 22 refs.
Order from SLA $1.60 63-10523

Trans. of Pathologie et Biologie (France) 1960, v. 8, no. 5/6, p. 503-509.

DESCRIPTORS: Chemical properties, Drugs, *Corticosteroid agents, *Inflammation, Hormones, Connective tissues, *Molecular structure.

Eger, V. W. and Reincke, A.
SULFONAMIDE DERIVATIVES AS PROTECTIVE AGENTS AGAINST HEPATIC NECROSIS. [1962] 7p. [refs. omitted].
Order from SLA $1.10 63-10397

Trans. of Arzne[imittel]-Forschung (West Germany) 1959, v. 9 [no. 6] p. 363-365.

DESCRIPTORS: *Sulfonamides, Chemotherapeutic agents, *Liver, Necrosis, Therapy, Inhibition, Cysteine, *Orinase, Drugs, Hepatitis.

Fredenhagen, Karl and Wellman, Marianne.
CAUSTIC EFFECTS OF HYDROGEN FLUORIDE AND REMEDIES. 1942, 4p.
Order from SLA $1.10 63-10468

Trans. of Angew[andte] Chemie (Germany) 1932, v. 45, no. 33, p. 537-538.

DESCRIPTORS: Corrosive gases, *Hydrogen compounds, *Fluorides, *Burns, Magnesium compounds, Poisoning, Necrosis, Skin.

Kedrov, A. A. and Naumenko, A. I.
THE ACTION OF CERTAIN PHARMACOLOGICAL AGENTS ON INTRACRANIAL CIRCULATION (Deistvie Nekotorykh Farmakologicheskikh Agentov na Vnutricherepnogo Krovoobrashcheniya). Apr 63 [18]p. 14 refs. NASA Technical Trans. F-160; N63-14248.
Order from OTS $0.50 63-11606

Trans. of Fiziologicheskii Zhurnal SSSR, 1954, v. 40, no. 3, p. 280-288.

DESCRIPTORS: *Drugs, *Brain, *Cardiovascular system, Arteries, Carbon dioxide, *CNS depressants, Nitrates, Purine alkaloids, Dibasol, Vitamin B complex, Vitamin P, Aldehydes, *Blood circulation.

The intracranial arteries are constantly in a state of tonic constriction of considerable intensity. The chemical agent with the most powerful action on the tonus of the intracranial arteries (tending to reduce it, is carbon dioxide. Nitrates, caffeine (with the longest lasting effect), and dibazol are pharmacological substances with a direct depressant action on the tonus of the intracranial arteries. Nicotinic acid and citrin have no marked effect. Citral has a weakly expressed effect on the tonus of the intracranial arteries, tending to reduce it slightly. (NASA Abstract)

Khokhlov, A. S. and Kachalina, E. V.
CHEMICAL STUDY OF PHENOXYMETHYLPENICILLIN PT. 6. PREPARATION AND PROPERTIES OF a-PHENOXYMETHYLPENILLOINAMIDE OF PHENOXYMETHYLPENICILLOIC ACID. [1963] 4p.
Order from ATS $7.00 ATS-58Q69R

Trans. of #Antibiotiki (USSR) 1960, v. 5, no. 5, p. 41-44.

DESCRIPTORS: Antibiotics, *Penicillins, Synthesis, Phenoxy radicals, Methyl radicals, Organic acids.

Lazarev, N. V. and Levina, E. N., eds.
MANGANESE OXIDES (THEIR COMPARATIVE TOXICITY, HYGIENIC SIGNIFICANCE AND CLINICAL PICTURE OF THE CHRONIC EFFECT OF MANGANESE). 15 Apr 63 [40]p. JPRS: 18698.
Order from OTS $1.00 63-21574

Trans. of mono. Okisly Margantsa (Sravnitel'naya Ikh Toksichnost', Gigienicheskoe Znachenie i Klinika Khronicheskogo Vozdeistviya Margantsa) Leningrad, 1962, p. 2-6, 14-18, 108-130, 153-163.
Another trans. of p. 2-6, 14-18, 108-110, 153-163 is available from OTS $0.75 as 63-21091, JPRS-17557, 11 Feb 63 [26]p.

DESCRIPTORS: *Manganese compounds, Oxides, *Toxicity, *Industrial medicine, *Poisoning, Metal poisoning, Chemical analysis, Public health, Welding.

Contents:
Foreward
Some data on the distribution of occupational manganese intoxications, by E. N. Levina
Hygienic significance of manganese oxides in certain industrial processes, by M. M. Tuchenko
Conclusion, by E. N. Levina
Table of contents.

Litter, M.
DIURETICS (Diureticos). Jan 63, 21p. 21 refs.
Order from SLA $2.60 63-10671

Trans. of el Dia Medico (Argentina) 1962, v. 34, 5 Apr, p. 409-414.

DESCRIPTORS: *Diuretics, Edema, Kidneys, Toxicity, *Mercury compounds, *Thiazines, Dosage, *Sulfonamides, *Azoles, *Thiazoles.

Sackmann, W.
SULFONAMIDE SENSITIVITY OF HEMOLYTIC STREPTOCOCCI IN ANIMAL EXPERIMENTS AND IN VITRO (Zur Sulfonamid-Empfindlichkeit Hämolytischer Streptokokken im Tierversuch und in Vitro). [1962] 7p. 14 refs.
Order from SLA $1.10 63-10183

Trans. of Path[ologia] et Microb[iologia] (Switzerland) 1961, v. 24, p. 768-773.

The possible cause of discrepancies, in particular the significance of the quantity of germs used for the in vitro test and in experimental animals are discussed. (Author)

DESCRIPTORS: *Sulfonamides, Sensitivity, *Streptococcus, Animals, Mice, Antibiotics, Chemotherapeutic agents.

8 of 12 streptococcus strains pathogenic for mice were influenced successfully by sulfaphenazole therapy of infected mice; 4 were resistant to therapy. In 11 cases the success of therapy could be predicted accurately on the basis of appropriate sensitivity tests in vitro.

Takahashi, Tetsuya.
DETERMINATION OF VITAMIN D IN PHARMACEUTICAL PREPARATIONS AFTER SEPARATION WITH ALUMINA-SUPERFILTROL CHROMATOGRAPHY. [1962] 11p. 10 refs.
Order from SLA $1.60 63-10906

Trans. of Yakugaku Zasshi (Japan) 1962, v. 82, p. 1349-1354.

DESCRIPTORS: Drugs, Pharmacology, Determination, *Vitamin D, Separation, Vitamin A, *Chromatographic analysis, *Clay, Absorption (Physical), Absorption spectrum, Vitamins, Aluminum compounds, Chemical analysis, Oxides.

Ukru, E.
CHEMOTHERAPEUTIC TRIAL WITH SU 1906 CIBA IN LEPROSY AND FIRST RESULTS (Essai de la Chimiotherapie de la Lèpre avec SU 1906 CIBA et ses Premiers Résultats) July 62, 4p. 8 refs.
Order from SLA $1.10 62-20033

Partial trans. (summary) of Türk Ij[ien ve] Tecr[übi] Biol[oji] Derg[isi] 1960, v. 20, p. 163-166.

DESCRIPTORS: *Chemotherapeutic agents, Therapy, *Leprosy, Antitubercular agents, *Isoniazid, *Sulfones, Drugs.

Radiobiology

Weicker, H. and Hungerland, H.
THALIDOMIDE EMBRYOPATHY. I. OCCURRENCE IN AND OUTSIDE OF GERMANY. [1962] 24p. (figs. omitted) 27 refs.
Order from SLA $2.60 63-10328

Trans. of D[eu]tsch[e] Med[izinische] W[ochen]schr [ift] (West Germany) 1962, v. 87, no. 19, p. 992-1002.

DESCRIPTORS: *Thalidomide, Embryos, Pathology, *Anomalies, Vital statistics, Germany, Distribution, Drugs.

MEDICAL RADIOLOGY, 1963 [VOL. 8] NO. 1: [SELECTED ARTICLES]. 25 Apr 63, 37p. 31 refs. JPRS: 18904.
Order from OTS $1.25 63-21676

Trans. of Meditsinskaya Radiologiya (USSR) 1963 [v. 8] no. 1, p. 24-32, 36-46, 62-64.

DESCRIPTORS: *Radiobiology, *Radiation effects, *Cancer, *Mammary glands, Diagnosis, *Thyroid gland, *Scintillation counters, Public health, Radioactive isotopes, Gold, Zinc, Brain, Bioelectronics, Rabbits, Therapy, *Properdin, *Radiation sickness, Mice

Contents:
Preoperative irradiation of mammary cancer via interstitial administration of radioactive colloidal gold, by A. V. Kantin and others
Determination of the functional state of the thyroid by means of a diagnostic scintillation apparatus of the DSU-61 type, by V. N. Slavnov and T. P. Sivachenko
Some results of the elaboration of the problem of radiobiology in public health institutions in 1961, by E. I. Vorob'ev and L. V. Funshtein
The effect of prolonged internal irradiation with radioactive zinc on the bioelectric activity of the brain of rabbits, by V. G. Ovakimov
The therapeutic effect of purified properdin in acute radiation sickness of mice, by V. Ya. Vissarionova and I. L. Chertkov

Dimitrieva, V. S. and Rybakov, A. I.
TREATMENT OF MAXILLARY INJURIES IN EXPERIMENTAL ACUTE RADIATION SICKNESS [SELECTED PARTS]. 23 Apr 63, 18p. JPRS: 18850.
Order from OTS $0.50 63-21647

Trans. of mono. Lechenie Travmy Chelyustei pri Ostroi Luchevoi Bolezni v Eksperimente, Moscow, 1962, p. 152-171.

DESCRIPTORS: *Radiation sickness, Radiation injuries, Bone, Therapy, *Head, Plastic surgery, Healing, Plasma substitutes, Antibiotics.

Contents:
Table of contents
Treatment of animals with combined radiation injuries
Conclusion

Gol'dberg, E. D.
AVERAGE DIAMETER OF ERYTHROCYTES DURING CHRONIC ACTION OF SMALL DOSES OF IONIZING RADIATION ON THE HUMAN ORGANISM. 26 Apr 63, 4p. 7 refs. JPRS: 18938.
Order from OTS $0.50 63-21696

Trans. of Laboratornoe Delo (USSR) 1963 [v. 9] no. 2, p. 9-11.

DESCRIPTORS: *Erythrocytes, Blood, Size, *Radiation effects, Radioactive isotopes, X-ray generators.

OTS SB-511 $0.10
Office of Technical Services, Dept. of Commerce, Washington, D. C.
RADIOPROTECTIVE AGENTS. Feb 63, 9p. 94 refs. OTS Selective Bibliography SB-511.
Order from OTS $0.10 OTS SB-511

DESCRIPTORS: *Radioprotective agents, *Bibliography, *Drugs, *Antibiotics, Chemicals, *Diet, Nutrition, Anesthesia, Radiation effects.

Lists 94 domestic and foreign references on radioprotective (anti-radiation) agents added to the OTS collection through February 1963. Includes reports on: drugs, i.e., cysteamine, mercamine, AET, tsigerol, insulin, guanadine, etc.; antibiotics, i.e., streptomycin; chemicals, among them Tsiin - derived from common tea fungus; diet and nutrition supplement-alfalfa or broccoli; and, narcosis. (Author)

Petrov, R. V.
IMMUNOLOGY OF ACUTE RADIATION INJURY. 9 Apr 63 [333]p. 576 refs. JPRS: 18620.
Order from OTS $5.00 63-21545

Trans. of mono. Immunologiya Ostrogo Luchevogo Porazheniya, Moscow, 1962, 267p.

DESCRIPTORS: *Immunology, *Radiation injuries, Radiobiology, *Radiation effects, Immunity, *Antigens and antibodies, *Antigen-antibody reactions, Sensitivity, *Communicable diseases, *Toxins and antitoxins, Tissues (Biology), *Radiation sickness, *C-reactive protein, Adaptation (Physiology), *Immune serums, *Radioprotective agents.

Contents:
The effect of radiation on antimicrobial immunity
Sensitivity to infection after irradiation
Basic immunity mechanisms
Infectious processes in the irradiated organism
Endogenous infection
Exogenous infections
Noninfectious immunology of radiation sickness
Antigenic properties of tissues of irradiated animals
C-reactive protein and radiation sickness
Reactions of the body to tissue antigens
Study of the effect of immune sera against tissues of irradiated animals.

Zoology

PROBLEMS OF ICHTHYOLOGY, 1961, NO. 3[20]: [SELECTED] TRANSLATIONS. 18 Apr 63 [44]p. 29 refs. JPRS: 18781.
Order from OTS $1.25 63-21612

Trans. of Voprosy Ikhtiologii (USSR) 1961, no. 3[20] p. 481-490 and 552-569.

DESCRIPTORS: *Fishes, *Reproduction (Physiology), Transplantation, Crustacea, Worms, Mollusca, *Identification, Distribution.

Contents:
Reproduction of the "Azov roach" Rutilus Rutilus Heckeli (Nordmann) on artificial spawning grounds in the lower reaches of the Dnepr, by N. D. Belyi
Transplantation of fish and water invertebrates in the USSR in 1957-59, by A. F. Karpevich and E. N. Bokova
Marking of commercial fish, by N. E. Aslanova.

PROBLEMS OF ICHTHYOLOGY, 1963, NO. 1(26): SELECTED ARTICLES. 7 May 63, 50p. 20 refs. JPRS: 19099.
Order from OTS $1.50 63-21781

Trans. of Voprosy Ikhtiologii (USSR) 1963, no. 1(26) p. 7-14, 131-143, 163-176.

DESCRIPTORS: *Fishes, Identification, Diseases, *Carp, Scale, Ecology, Radioactive isotopes.

Contents:
The michurinist trend in biology and ichthyological research, by G. S. Karzinkin and G. V. Nikol'skii
Structure characteristics of the scale covering of the scaled sardine, (Sardinella aurita valienciennes), by V. L. Pechkurenkov
Results of tagging the carp Cyprinus carpio L. in the lower reaches and delta of the Volga, by P. D. Nelovkin
Some comments on the causes of disease in the carp Cyprinus carpio L. in the Volga delta, by V. G. Stroikina

RECENT DEVELOPMENTS IN SOVIET LAKE AND RIVER FISHING. 20 May 63, 19p. (figs. omitted). JPRS: 19282.
Order from OTS $0.75 63-21863

Trans. of Rybnoe Khozyaistvo (USSR) 1960 [v. 36] no. 9, p. 7-16.

DESCRIPTORS: *Fisheries, *Lakes, *Rivers, Fishes, Scientific research, Scientific organization.

Contents:
Tasks of the State Scientific Research Institute of Lake and River Fishing (GosNIORKh) by P. L. Pirozhnikov
Tasks of the Ukrainian Scientific Research Institue of Fishing (UNIIRKh) by V. A. Murin

STUDIES IN MARINE BIOLOGY. 23 Apr 63, 66p. 51 refs. JPRS: 18863.
Order from OTS $1.75 63-21656

Trans. of Leningrad U. Uchenye Zapiski (USSR) 1962, no. 311, p. 92-152.

DESCRIPTORS: *Marine biology, *Sex glands, *Salmon, *Fishes, Adaptation (Physiology), White Sea, Hydroelectric power systems, Rivers, Fluid flow, Aquatic animals, *Plankton, *Algae.

Contents:
The state of the sexual glands in the humpback salmon at various stages of its life cycle in relation to acclimatization in the basins of the White and Barents Seas, by G. M. Persov and O. F. Sakun
An analysis of the effect of the Narvskaya Hydroelectric Station on the ichthyofauna of the Narova River, by I. A. Barannikova
Hydrobiological characteristics of the tail water of the Narova River in relation to regulation of its flow, by L. A. Belogolovaya and L. S. Bogdanova.

Kongiel, Roman.
CONSIDERATIONS ON THE VARIABILITY OF ECHINOIDEA (Rozwazania nad Zmiennoscia Jezowcow) tr. by D. Brzostowska. 1962 [44]p. 15 refs. PL-480 Int.
Order from OTS $0.50 60-21506

Trans. of Polskie Towarzystwo Geologiczne. Rosznik, 1937, v. 13, p. 194-250.

DESCRIPTORS: Aquatic animals, *Echinodermata, *Taxonomy, Statistical analysis, *Correlation techniques, Morphology, *Paleoecology.

The biometrical approach is employed in an effort to determine characteristics of importance to the task of differentiating echinoids. Attention is directed largely to contemporary material. Specific data is given for Psammechinus milaris, Echinocardium cordatum, Amphidetus pennatifidus, A. flavescens, Brissoma lyriferum, Offaster pilula, and O. pomeli.

Linberg, G. U.
THE COMMON NAMES OF FISH. 30 Apr 63, 6p.
JPRS: 19008.
Order from OTS $0.50 63-21729

Trans. of Zoologicheskii Zhurnal (USSR) 1959, v. 38, no. 12, p. 1894-1896.

DESCRIPTORS: *Fishes, *Taxonomy, Classification.

Maksimovic, M.
EXPERIMENTAL RESEARCH ON THE INFLUENCE OF TEMPERATURE UPON THE DEVELOPMENT AND THE POPULATION DYNAMICS OF THE GYPSY MOTH (LIPARIS DISPAR L.) (Eksperimentalna Istrazivanja o Dejstvu Temperature na Individualno Razvice i Populacionu Dinamiku Gubara (Liparis dispar L.) tr. by David Tornquist. 1963, 95p. 43 refs. PL-480 Agr.
Order from OTS $1.00 61-11203

Trans. of Posebno Izdanje Bioloskog Instituta NR Srbije, Beograd [sic] (Yugoslavia) 1958, v. 3, 115p.

DESCRIPTORS: *Insects, *Lepidoptera, *Ecology, Reproduction, Growth, Population, Dynamics, Viability, Climatic factors, Atmospheric temperature, Humidity.

Nikol'skaya, M. N.
THE CHALCID FAUNA OF THE U.S.S.R. (CHALCIDOIDEA) (Khal'tsidy Fauny SSSR) tr. by A. Birron and Z. S. Cole. 1963, 593p. PL-480 Smi.
Order from OTS $6.00 61-31220

Trans. of Opredeliteli po Faune SSSR, 1952, no. 44, [576p.]

DESCRIPTORS: *Insects, *Hymenoptera, *Taxonomy, Morphology, Growth, Parasities, Ecology, Paleoecology, Distribution, Economics, Bibliographies.

The keys contained in the volume, compiled on the basis of female morphology, cover more than 400 genera and 1,200 species, mostly Palearctic in distribution. Some genera and species - unknown in the Palearctic - are also included when it seems likely that these may one day be found there. The different groups have not all been studied to the same extent, and the amounts of material on them are varied, so that individual sections of the present Key are unequal in extent. Families like the Pteromalidae, Tridymidae, Miscogasteridae, Eulophidae, Elachertidae, Entedontidae, Tetrastichidae, and the Mymaridae have been poorly studied. They are treated in brief keys which present generic features, lists of economically important species, and the total number of species in the genus. The keys to the genera in the other families are followed by a series of sections containing detailed characterizations and then by species keys containing brief descriptions and references to distribution and hosts. As an aid to the use of the Key, a number of figures are included, some original, and others taken from the works of Russian and foreign authors. (Author)

Orlov, O. Yu. and Bygov, A. L.
VISION IN CEPHALOPOD MOLLUSKS (Zrenie Golovonogikh Mollyuskov) tr. by Tatiana Boldyreff. 14 Aug 62, 8p. (figs. omitted).
Order from OTS or SLA $1.10 62-33362

Trans. of Priroda (USSR) 1962 [v. 51] no. 3, p. 115-118 Another trans. is available from OTS or SLA $1.60 as 62-24729, JPRS-13756, 15 May 62 [12]p.

DESCRIPTORS: *Vision, *Cephalopoda, Mullusca, Eye, Dark adaptation, Aquatic animals, Light adaptation, Marine biology.

Orlov, Yu. I., Polikashin, L. V., and Rass, T. S.
A METHOD OF COLLECTION, TRANSPORTATION AND POST-INCUBATION OF PLEUROGRAMMUS AZONUS ROE [AND] THE GREENLINGS AND THEIR INTRODUCTION INTO THE NORTHERN SEAS OF THE USSR. 4 Apr 63 [32]p. 68 refs. JPRS: 18561.
Order from OTS $1.00 63-21510

Trans. of [Akademiya Nauk SSSR]. Institut Okeanologii. Trudy, 1962, v. 59, p. 183-203.

DESCRIPTORS: *Fishes, Transportation, *Eggs, Growth, *Barents Sea, *Marine biology, Viability, Ecology, Adaptation (Physiology), Temperature, Aquatic animals, Reproduction, Oceanographic data.

Ponomareva, L. A.
REPRODUCTION OF EUPHAUSIIDAE OF THE SEA OF JAPAN AND DEVELOPMENT OF THEIR EARLY LARVAL STAGES, tr. by V. O. Pahn. [1962] [19]p. 21 refs.
Order from OTS or SLA $1.60 63-15145

Trans. of Zoologicheskii Zhurnal (USSR) 1959, v. 38, no. 11, p. 1643-1662.

DESCRIPTORS: *Crustacea, *Sea of Japan, *Growth, *Morphology, Marine biology, Aquatic animals.

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 136 (CHEMISTRY SERIES). 17 Apr 63, 7p. JPRS: 18752.
Order from OTS $0.50 63-21596

Abstract trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1963, v. 320, no. 5/6, p. 205-319.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Inorganic substances, Phase studies, *Chemical analysis, Chromatographic analysis, *Catalysts, Borates, *Complex compounds, Ferromagnetic materials, Minerals, Metals.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 144 (CHEMISTRY SERIES). 22 Apr 63, 12p. JPRS: 18836.
Order from OTS $0.50 63-21641

Abstract trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1963, v. 320, no. 1/4, p. 3-204.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Inorganic substances, Imines, Phosphorous, Sulfur compounds, Carbonyl radicals, Silicon compounds, Strontium compounds, *Crystals, Cobalt compounds, Nuclear magnetic resonance, Collagen, Nitrogen compounds, Intermetallic compounds, Ferrates, Radiochemistry, Rare earth compounds, Metalorganic compounds, Fluorides, Amines, Silicates, Clays.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 150 (CHEMISTRY SERIES). 25 Apr 63, 8p. JPRS: 18908.
Order from OTS $0.50 63-21680

Abstract trans. of Zeitschrift für Physikalische Chemie, Leipzig (East Germany) 1963, v. 222, no. 1/2, p. 1-126

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Physical chemistry, *Crystals, *Phase studies, Thermodynamics, Catalysts, Chromatographic analysis, Spectroscopy, Thermodynamics, Towers (Chemistry).

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 154 (CHEMISTRY SERIES). 30 Apr 63, 7p. JPRS: 19011.
Order from OTS $0.50 63-21730

Abstract trans. of Magyar Kemiai Folyoirat (Hungary) 1963, v. 69, no. 3, p. 97-142.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Physical chemistry, *Chemical analysis, Complex compounds, Alcohols, Formaldehyde, Carbon dioxide, Molybdenum, Tritium, Sulfur compounds, Silanes.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 162 (CHEMISTRY SERIES). 7 May 63, 13p. JPRS: 19093.
Order from OTS $0.50 63-21775

Consists of abstracts of articles from the scientific and technical journals of Hungary and Poland.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Conferences, *Physical chemistry, Reaction kinetics, *Catalysts, Colloids, Organic compounds, Molecular structure, Alkaloids, *Complex compounds, *Towers (Chemistry).

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 58 (CHEMISTRY AND METALLURTY SERIES). 6 May 63, 32p. JPRS: 19065.
Order from OTS $1.00 63-21753

Trans. of selected abstracts from Referativnyi Zhurnal. Khimiya (USSR) 1962, nos. 21-23; and Referativnyi Zhurnal. Metallurgiya (USSR) 1962, no. 6.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, *Metallurgy, *Physical chemistry, Thermochemistry, Crystals, Solutions, Colloids, Reaction kinetics, Radiochemistry, *Inorganic substances, Complex compounds, *Chemical engineering, Catalysts, Ceramics, *Organic compounds, Synthesis, *Polymers, *Chemical analysis, Metals.

CATALYTIC EFFECT OF SOME METAL POLYCHELATES: ITEM OF INTEREST (EXTENDED). 14 Mar 63 [16]p. 22 refs. AID rept. S-63-34.
Order from OTS or SLA $1.60 63-19033

DESCRIPTORS: *Catalysis, *Chelate compounds, Metals, *Metalorganic compounds, Polymers, Synthesis, Structural properties, Magnetic properties, Paramagnetic resonance, Transition elements, Electrical conductance.

This Item traces the entire course of an investigation of some metal polychelates as published in the open Soviet literature. (AID Abstract)

Barkalov, I. M. and Gol'danskii, V. I.
NEWS IN RADIATION POLYMERIZATION. 24 Apr 63, 19p. 57 refs. JPRS: 18868.
Order from OTS $0.50 63-21657

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 12 [p. 859-863].

DESCRIPTORS: *Polymerization, Free radicals, *Vinyl plastics, *Radiation effects, Ionization, Radiation chemistry

Nöth, Heinrich and Beyer, Hasso.
THE CHEMISTRY OF BORON. III. REDUCTION OF FUNCTIONAL ORGANIC GROUPS BY ALKYL AMINE BORANES. 15 Nov 60, 14p. 7 refs.
Order from SLA $1.60 63-10570

Trans. of Chemische Berichte (West Germany) 1960, v. 93, p. 1078-1084.

DESCRIPTORS: Boron, Reduction (Chemistry), Organic compounds, Alkyl compounds, Amines, *Boron compounds, *Hydrides, *Boranes, Alcohols, Aldehydes, Ketones, Chlorides, Benzoyl radicals, Quinones, *Organoboranes.

Alkyl amine boranes, $R_nH_{5-n}N.BH_3$, reduce aldehydes, ketones, and acid chlorides to the corresponding alcohols. p-Benzoquinone is reduced to hydroquinone. The reaction procedure is illustrated using as examples the reduction of p-benzoquinone and benzoyl chloride. (Author)

Paul, R.
RANEY NICKEL. [1962] 75p. 196 refs.
Order from SLA $7.60 63-10424

Trans. of Société Chimique de France. Bulletin, 1940, ser. 5, v. 7, p. 296-345.

DESCRIPTORS: *Nickel, *Nickel alloys, Aluminum alloys, *Catalysts, Preparation, Catalysis, Chemical reactions, Theory, Chemical analysis, Bibliographies.

Petit, G.
RELATIONSHIPS BETWEEN OXIDIZABILITY AND STRUCTURE IN ACID MEDIUM. [1963] 17p.
Order from ATS $21.75 ATS-54Q67F

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1945, ser. 5, v. 12, p. 568-581.

DESCRIPTORS: *Oxidation, Structural properties, *Acids.

Signer, R., Allemann, K. and others.
A LABORATORY APPARATUS FOR THE MULTISTAGE PARTITION OF SUBSTANCES BETWEEN TWO IMMISCIBLE LIQUIDS. [1963] 10p.
Order from ATS $11.00 ATS-09Q68G

Trans. of Dechema Monograph[ien] (West Germany) 1956, v. 27, p. 32-44.

DESCRIPTORS: *Laboratory equipment, *Material separation, Liquids.

Strecker, W. and Thienemann, H.
THE ACTION OF OZONE ON ALKALI METALS, AMMONIA, AND SUBSTITUTION PRODUCTS OF AMMONIA. 13 Apr 61, 26p. 14 refs.
Order from SLA $2.60 63-10544

Trans. of Chemische Berichte (Germany) 1920, v. 53, p. 2096-2113.

DESCRIPTORS: *Ozone, Chemical reactions, *Alkali metals, *Ammonia, *Amines, Hydroxides, Methyl radicals, *Hydrazines, Hydrates.

Bockemüller, Wilhelm.
THE DETECTION AND DETERMINATION OF FLUORINE IN ORGANIC COMPOUNDS. [1962] 13p. 34 refs.
Order from SLA $1.60 63-10478

Trans. of Zeitschrift für Analytische Chem[ie] (Germany) 1933, v. 91, p. 81-90.

DESCRIPTORS: Chemical analysis, *Fluorine, Organic compounds, Alkali metals, Hydrolysis, Decomposition, Oxidation, Determination.

Breant, Mylene and Merlin, Jean-Claude.
A SIMPLIFIED HANGING DROP ELECTRODE FOR THE STUDY OF REACTIONS BY LINEAR TIME-CURRENT MEASUREMENT: APPLICATION TO THE STUDY OF THE OXYDATION OF ZINC AMALGAM. [1962] 4p. 8 refs.
Order from SLA $1.10 63-10244

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1961 [no. 11] p. 2295-2296.

DESCRIPTORS: *Electrochemistry, *Electrodes, Design, Electric currents, Measurement, *Zinc alloys, *Mercury alloys, Oxidation.

Cornides, Istvan and Kiss, A. Sandor.
THERMO ANALYTICAL DETERMINATION OF THE CONCENTRATION OF AMMONIUM NITRATE SOLUTION. [1962] 4p. (refs. omitted).
Order from SLA $1.10 62-20235

Trans. of Przemysl Chemiczny (Poland) 1961, v. [17] (40) no. 12, p. 694-695.

DESCRIPTORS: *Ammonium compounds, *Nitrates, Fuzed materials, Analysis, Calorimetry, *Thermistors, Recording devices, Nomograms.

Dahn, H. and Fuchs, H.
A PREPARATIVE ANALOG FOR SEPARATION IN THIN LAYERS: HORIZONTAL COLUMN CHROMATOGRAPHY IN A CELLOPHANE TUBE. (Ein Präparative Analogon zur Trennung and Dünnen Schlichten: Horizontale Säulenchromatographie). [1962] [18]p. 24 refs.
Order from SLA $1.60 63-10336

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) [1962] v. 45, no. 1, p. 261-270.

DESCRIPTORS: Separation, *Chromatographic analysis, Plastic films, Pipes, Adsorbents, Thin films.

Emelin, E. A., Svistunova, G. N., and Tsarfin, Ya. A.
SIMULTANEOUS DETERMINATION OF SULFURIC ACID AND PHENOSULFONIC ACID IN MIXTURES. [1963] 2p.
Order from ATS $2.50 ATS-57Q68R

Trans. of #Zavodsk[aya] Lab[oratoriya] (USSR) 1962, v. 28, no. 5, p. 548.

DESCRIPTORS: *Sulfuric acid, *Phenols, *Sulfonic acids, Mixtures, Chemical analysis.

Kaufmann, H. P., Budwig, J., and Schmidt, C. W.
PAPER CHROMATOGRAPHY IN THE FIELD OF FATS. XI. IDENTIFICATION AND SEPARATION OF CONJUGATED, UNSATURATED FATTY ACIDS. Studies in the fat field, 136th communication. [1962] (figs. omitted) 4 refs.
Order from SLA $1.10 63-10822

Trans. of [Fette Seifen Anstrichmittel] (West Germany) 1952, v. 54 [no. 1] p. 10-12.

DESCRIPTORS: *Paper chromatography, *Fats, Chromatographic analysis, Separation, *Fatty acids, Dyes, Linoleic acid.

Konopik, Nelly.
ON o-DIPHENOLGERMANIC ACIDS: POLAROGRAPHIC AND OPTICAL INVESTIGATIONS. [1962] 18p. 6 refs.
Order from SLA $1.60 62-18567

Trans. of Monatshefte für Chemie (Austria) 1961, v. 92 [no. 1] p. 8-21.

DESCRIPTORS: *Electrochemistry, *Complex compounds, *Phenols, *Naphthalenes, Hydroxides, *Pyrogallol, *Germanium compounds, Dioxides, Acids, Polarigraphic analysis, Electrolytic titration, Spectrographic analysis.

Analogous to pyrocatecholgermanic acid complex germanic acids of pyrogallol and 2, 3 dihydroxynaphthaline-6-sulfonic acid yield relatively positive reduction waves at the dropping mercury electrode in acid solution (pH below 4.0). The dependence of these waves on ionic strength, pH, o-diphenol concentration and germanium concentration was investigated. It was found that the limiting current is diffusion controlled and that 4 electrons are taken up in the reduction for each germanium atom. By means of Job's method of continuous variations the composition of the complexes in solution has been determined potentiometrically and spectrophotometrically and found to be 1:3, germanium to phenol. (Author)

Korbl, Jiri.
ANALYTICAL APPLICATIONS OF SILVER PERMANGANATE. II. DETERMINATION OF CARBON AND HYDROGEN IN ORGANIC SUBSTANCES. [1963] 16p.
Order from K-H $16.00 K-H 5577 b, II

Trans. of Chemicke Listy (Czechoslovakia) 1955, v. 49, p. 862-868.

DESCRIPTORS: *Carbon, *Hydrogen, *Organic compounds, Chemical analysis, *Silver compounds, *Permanganates.

Körbl, J. and Blabolil, K.
MICRODETERMINATION OF CARBON AND HYDROGEN. Pt. 4 of Analytical Applications of Silver Permanganate. 14 Aug 62 [6]p. 7 refs.
Order from SLA $1.10 62-18988

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1956, v. 21, p. 318-320.

DESCRIPTORS: *Microanalysis, *Carbon, *Hydrogen, Organic compounds, Silver compounds, Permanganates, Catalysts, Absorption, Halogens, Sulfur, Reaction kinetics.

The short catalytic combustion-tube filling, with some modifications, was used for the microdetermination of carbon and hydrogen in organic compounds. (Author)

Korbl, Jiri and Komers, Radko.
ORGANOSILICON COMPOUNDS. VIII. DETERMINATION OF CARBON AND HYDROGEN IN ORGANOSILICON COMPOUNDS. [1963] 16p.
Order from K-H $16.00 K-H 5577 a

Trans. of Chemicke Listy (Czechoslovakia) 1956, v. 50, p. 1120-1125 [also pub. in Sbornik Chekhoslovatskykh Khimicheskykh Rabot (Czechoslovakia) 1957, v. 22, p. 222-229].
Another trans. is available from SLA mi$2.40, ph$3.30 as 59-15733 [1959] [19]p.

DESCRIPTORS: *Silicon compounds, Organic compounds, Carbon, Hydrogen, Chemical analysis.

Krainova, K. M. and Lomako, A. V.
COLORIMETRIC METHOD OF DETERMINING TITANIUM DIOXIDE CONTENT. 19 July 62, 9p. 3 refs.
Order from OTS or SLA $1.10 63-10785

Trans. of Khim[icheskie] Volokna (USSR) 1960, no. 4, p. 69-71.

DESCRIPTORS: *Titanium compounds, Dioxides, *Colorimetry, Quantitative analysis, Hydrogen compounds, Peroxides, Optical properties, Statistical data.

Langer, N. A. and Novikov, T. P.
A METHOD FOR THE RAPID ANALYSIS OF FLUX AN-348-A. May 59 [8]p. 7 refs. GKN Trans. 820; BISI Trans. 1284; [DSIR] NLL M. 4574.
Order from OTS or SLA $1.10 62-24217

Trans. of Avtomaticheskaya Svarka (USSR) 1956 [v. 9] no. 5, p. 80-83.

DESCRIPTORS: Chemical analysis, *Fluxes (Fusion), Fluosilicic acids, Calcium, Fluorine, Manganese, Oxides, Phosphorus, Sulfur

A procedure is proposed for the express analysis of flux AN-348-A, by which it is possible to complete the chemical analysis of the main components in 2 hours instead of 30, which is the normal under existing methods. This saving in the time required for the analysis is achieved by using gelatin for the analysis of silica (instead of the long, repeated evaporation), calcium, manganese and fluorine without the preliminary separation of components, determining the phosphorus by the precipitation of sesquioxides and determining the sulphur by the distillation method. (Author)

Mencik, Z.
DETERMINATION OF FRACTIONAL COMPOSITION OF POLYPROPYLENE BY EXTRACTION METHODS. [1963] 7p.
Order from ATS $11.25 ATS-58Q68C

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1962, v. 12(37), no. 9, p. 518-520.

DESCRIPTORS: *Propenes, Material separation, Chemical analysis, Polymers.

Mugdan, M. and Sixt, J.
DETERMINATION OF SMALL AMOUNTS OF OXYGEN IN GASES (Bestimmung Eines Geringen Sauerstoffgehaltes in Gasen). 5 Aug 54 [4]p. (foreign text included) 3 refs.
Order from SLA $1.10 63-10456

Trans. of Angewandte Chemie (Germany) 1933, v. 46, no. 5, p. 90-91.

DESCRIPTORS: Chemical analysis, *Oxygen, *Gases, Copper compounds, Ammonia, Colors, Chlorides.

Pesez, Maurice and Poirier, Pierre.
THE DETECTION AND DETERMINATION OF PRIMARY ALIPHATIC AMINES BY COLOR REACTION. [1962] 4p. (figs. omitted) 4 refs.
Order from SLA $1.10 63-10622

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1953, p. 754-756.

DESCRIPTORS: Aliphatic compounds, *Amines, *Amino acids, Chemical analysis, Colorimetry, Reagents, Nitrobenzenes, Azo radicals, Chlorides

A description of a procedure for detecting and determining primary aliphatic amines, in the presence of secondary or tertiary analogs, using p-nitrobenzenediazonium chloride. Applications to α-amino acids are considered.

Plank, Jenö.
GAS PIPETTE FOR THE ABSORPTION OF UNSATURATED HYDROCARBONS. 29 Oct 31, 3p. (figs. omitted).
Order from SLA $1.10 63-10426

Trans. of Chem[ische Technik] (Germany) 1931, v. 4, no. 33, p. 343.

DESCRIPTORS: *Pipettes, Absorption, *Hydrocarbons, Gas analysis, Mercury.

Pyriki, C. and Müller, R.
EXPERIENCES RELATING TO THE METHODS OF TOBACCO ANALYSIS. Paper read by C. Pyriki to the CORESTA Symposium at Istanbul, 23-24 Aug 60. [1962] 12p. 17 refs.
Order from OTS or SLA $1.60 63-10722

Trans. of [die] Nahrung (West Germany) 1962, v. 6, no. 2, p. 166-174.

DESCRIPTORS: *Tobacco, Chemical analysis, *Nicotine, Carbohydrates, Proteins, *Nitrogen, Amino acids, Titration.

Pyriki, Constantin and Richter, Konrad.
NICOTINE TRANSFER DURING STEAM DISTILLATION OF TOBACCO USING VARIOUS ALKALIZATION AGENTS WITH SPECIAL REFERENCE TO OXYNICOTINE. [1962] 34p. 26 refs.
Order from SLA $3.60 62-20208

Trans. of Institut für Tabakforschung. Berichte (East Germany) 1959, v. 6, no. 2, p. 241-264. Another trans. is available from K-H $42.50 as K-H-10281-g [1962] 34p.

DESCRIPTORS: *Tobacco, *Nicotine, Oxygen compounds, Alkaloids, Steam, Distilling plants.

A comparison of the alkalization strength in steam distillation was made for a determination of the alkaloids in a larger number of different tobaccos. It could be shown that small amounts of nicotine often remain in the distillation residues with the use of magnesium oxide, with these amounts being determinable only with sodium hydroxide. The paper-chromatographic investigation showed that these portions do contain certain amounts of nornicotine, but that the greatest portion consisted of nicotine. They were not formed as had been assumed from oxynicotine, but were already present in the tobacco and could not be very easily driven out of the cell structures with the use of a weaker alkalization agent. In contrast, the slow recurrence of nicotine when strongly alkalized tobacco residues were allowed to stand could be attributed to its formation from other tobacco components, but not from oxynicotine. The nicotine obtained in this manner was mainly racemic. (Author)

Rinck, E.
SEPARATION AND DETERMINATION OF FLUORINE. [1962] [55]p. 88 refs.
Order from SLA $5.60 63-10458

Trans. of Société Chimique de France. Bulletin, 1948, no. 3/4, p. 305-324.
Another trans. is available from SLA as AEC-tr-1806, 36p.

DESCRIPTORS: *Fluorine, Separation, Chemical analysis, Calcium compounds, Lead compounds, Chlorine compounds, Thorium compounds, Cerium compounds, Yttrium compounds, Aluminum compounds, Iron compounds, Fluorides, Fluorine compounds, Silicates, *Gravimetric analysis, *Volumetric analysis, Chemical precipitation, *Colorimetric analysis, *Distillation, Evaporation.
The principal methods of fluorine determination are briefly described.

Schramm, Gerhard and Primosigh, Josef.
ON THE QUANTITATIVE SEPARATION OF NEUTRAL AMINO ACIDS BY CHROMATOGRAPHY. [1962] 15p. (figs. omitted) 16 refs.
Order from SLA $1.60 63-10626

Trans. of [Chemische] Berichte (Germany) 1943, v. 76, p. 373-386.

DESCRIPTORS: Separation, *Amino acids, *Chromatographic analysis, Adsorption, Aliphatic compounds.

The chromatographic separation of neutral amino acids was successfully done by two methods: by adsorption on activated charcoal, and by adsorption on aluminum oxide in the presence of formaldehyde. (Author)

Spiteller, G.
THE O-EFFECT IN THE MASS SPECTRA OF AROMATIC COMPOUNDS. [1962] 7p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-18723

Trans. of Monatsh[efte für] Chem[ie] (Austria) 1961, v. 92, no. 6, p. 1147-1154.

DESCRIPTORS: *Mass spectroscopy, Benzenes, Ethyl radicals, *Salicylic acids, *Amides, Molecular isomerism, Mass spectrum.

The mass spectrum of O-ethylsalicylic acid amide VIIb is completely different from that of its m- and p-isomers and shows a typical "o-effect" in its mass spectrum. The compounds with the o-effect in the mass spectrum found to date belong to a relatively small group of aromatic compounds with very definite structural characteristics. The formation of the fragments which are characteristic of the o-effect can be readily explained in all of these cases by a mechanism proposed by McLafferty. Under the assumption that the formation of the fragments typical of the o-effect can take place only according to this mechanism, Compound VIIb should not have manifested an o-effect. The appearance of the o-effect in the mass spectrum of VIIb makes it evident that the conditions for the formation of the fragments which are characteristic of the o-effect must be sought merely in the possibility of the formation of stable cleavage products, and that, therefore, many more compounds should show an o-effect than was previously supposed. (Author)

Ter Meulen, H.
THE DETERMINATION OF NITROGEN IN COAL, IN COKE, AND IN ALBUMINOIDS. [23 June 58] 3p. (figs. omitted) 2 refs.
Order from SLA $1.10 63-10629

Trans. of Recueil des Travaux Chemiques des Pays-Bas (Netherlands) 1925, v. 44, p. 271-274.

DESCRIPTORS: Chemical analysis, Quantitative analysis, *Nitrogen, *Coal, *Coke, *Albuminoids, Sodium compounds, Carbonates, Ammonia.

Ter Meulen, H.
THE DETERMINATION OF NITROGEN IN ORGANIC COMPOUNDS BY CATALYTIC HYDROGENATION. 23 June 58, 2p.
Order from SLA $1.10 63-10628

Trans. of Rec[ueil des] Trav[aux] Chim[iques des Pays-Bas] (Netherlands) 1924, v. 43, p. 643-644.

DESCRIPTORS: Chemical analysis, *Nitrogen, *Organic compounds, Catalysis, *Hydrogenation.

Traube, Wilhelm and Schulze, Walter.
THE HIGHEST (HIGHER) OXIDES OF CALCIUM AND BARIUM. [1962] 19p. 9 refs.
Order from SLA $1.60 63-10631

Trans. of [Chemische] Berichte (Germany) 1921, v. 54, p. 1626-1644.

DESCRIPTORS: Oxides, *Calcium compounds, *Barium compounds, Physical properties, Colors, Quantitative analysis.

Überreiter, K. and Sorge, G.
TWO COLORIMETRIC METHODS. Pt. 1 of Quantitative Determination of Organic Peroxides. [1962] 10p. 9 refs.
Order from SLA $1.10 62-18946

Trans. of Angew[andte] Chem[ie] (West Germany) 1956, v. 68, p. 352-354.

DESCRIPTORS: Organic compounds, *Peroxides, Quantitative analysis, *Colorimetry, Organic solvents, Acetic acids, Benzenes, Chemical indicators, *Methylene blue, Amines.

Two new colorimetric methods for the quantitative determination of organic peroxides are described. Both of them operate in organic solvents and in the homogeneous phase. For determinations in glacial acetic acid, the indamine method, and for determinations in benzene, the methylene-blue method is recommended. Since atmospheric oxygen does not interfere, no inert gas atmosphere is required. With the methylene-blue method 0.03% active oxygen can still be detected quantitatively, and the limiting concentration is 1:30,000,000. This makes the method one of the most sensitive known analytical methods. (Author)

Walisch, Walter.
A RAPID ULTRAMICRO-METHOD OF SIMULTANEOUSLY DETERMINING THE C, H, AND N CONTENTS OF ORGANIC COMPOUNDS [Eine Ultra-mikroschnellmethode zur Gleichzeitigen Bestimmung des C-, H-, und N-Gehaltes Organischen Verbindungen]. [1962] 21p. (figs. omitted) 7 refs.
Order from SLA $2.60 63-10387

Trans. of Chem[ische] Ber[ichte] (West Germany) 1961, v. 94, no. 8, p. 2314-2327.
Another trans. is available from NRCC $1.50 as NRCC C-3939, NRCC TT-1002, 1962, 25p.

DESCRIPTORS: Microanalysis, Quantitative analysis, *Carbon, *Hydrogen, *Nitrogen, Organic compounds, Combustion.

The compound is burned in a flow of helium/oxygen. The combustion products are conducted through a reduction tube filled with copper, which holds back the oxygen and reduces the nitric oxides to nitrogen, and then through a small column of silica gel, in which the water becomes adsorbed. Then the carbon dioxide and nitrogen go with the flow of helium into a catharometer cell. The bridge voltage produced is integrated by a compensation integrator, so that a magnitude proportional to the (C + N) content is obtained. After passing through a buffer tube and a carbon dioxide absorption tube, the nitrogen enters a second catharometer cell, and there produces an integrator rotation proportional to the nitrogen content. Now the water is driven out by heating the silica gel column, and is indicated by the integrator in a similar way. In one hour it is possible to make four C, H, N determinations with specimens weighing 1 mg. (Author)

Yang, Yu-sheng.
ACTIVATION ANALYSIS OF RARE-EARTH ELEMENTS. 23 Apr 63, 6p. 21 refs. JPRS: 18861.
Order from OTS $0.50 63-21655

Trans. of Hua Hsüeh T'ung Pao (Chinese People's Republic) 1961, no. 5, p. 7-9.

DESCRIPTORS: *Rare earth elements, *Radioactivation analysis, Nuclear cross sections, Ion exchange

Inorganic Chemistry

Balarew, D.
THERMAL DECOMPOSITION OF METAPHOSPHORIC ACID. [1962] 8p. 7 refs.
Order from SLA $1.10 63-10483

Trans. of Zeitschrift für Anorganische Chemie (Germany) 1917, v. 102, p. 34-40.

DESCRIPTORS: *Phosphoric acid, Pyrolysis, Laboratory equipment

Chesalova, V. S. and Boreskov, G. K.
SPECIFIC CATALYTIC ACTIVITY OF METALLIC PLATINUM [Udel'naya Kataliticheskaya Aktivnost' Metallicheskoi Platiny]. [1962] 3p. 12 refs.
Order from OTS or SLA $1.10 63-10380

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1952, v. 85 no. 2, p. 377-379.

DESCRIPTORS: *Catalysis, *Platinum catalysts, Surface properties, Sulfur compounds, Dioxides, Oxidation.

The purpose of the present investigation was the determination of the specific catalytic activity of platinum while varying within wide limits its specific surface area and methods of preparation. In the course of this were investigated the catalytic activities of platinum deposited on silica gel, spongy platinum, and solid platinum. The specific catalytic activity of platinum foil is higher than that of other specimens. It is possible that this is due to the difference in the chemical composition. In the case of all of the tested specimens the specific catalytic activity is of the same order of magnitude. The mean value of the energy of activation determined at 427°C was 23,000 kcal. The platinum surface, from the standpoint of catalytic activity in the reaction of sulfur dioxide oxidation, does not experience any significant changes due to the conditions prevailing during the preparation of catalysts, nor is it affected by the choice of carrier or support, variation of specific surface area within wide limits, size of crystallites, and mechanical and thermal treatment.

Damianovich, Horacio.
THE CHEMISTRY OF HELIUM AND HELIONOIDS (ANALOGS). 24 June 60, 8p.
Order from SLA $1.10 63-10517

Trans. of mono. American Scientific Congress (no. 8) Washington, May 1940, Proceedings, 1942, v. 7 (Physic[al] and Chem[ical] Sci[ences]) p. 137-144.

DESCRIPTORS: *Helium, Chemical compounds, Theory, Synthesis, Chemical properties, Valence

Damianovich, H[oracio].
[THE INERTIA AND THE CHEMICAL ACTIVITY OF THE RARE GASES]. II. OBTAINING STABLE COMPOUNDS BY THE ACTION OF HELIUM ON PLATINUM, ACTIVATED BY CATHODIC EVAPORATION. [1962] 21p. 14 refs.
Order from SLA $2.60 63-10389

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1938, ser. 5, v. 5, p. 1092-1106.

DESCRIPTORS: *Helium group gases, Chemical reactions *Platinum compounds, *Helium, *Xenon, Oxygen compounds, Nitrogen compounds, Hydrogen compounds, Pyrolysis, Laboratory equipment, Cathodes, Evaporation.

(See Also 63-10522)

Damianovich, H[oracio]
[THE INERTIA AND THE CHEMICAL ACTIVITY OF THE RARE GASES]. III. COMPARISON OF THE PROPERTIES OF HELIUM-PLATINUM COMPOUNDS WITH THOSE OF THE SYSTEM HYDROGEN-PLATINUM AND WITH THOSE OF THE COMPOUNDS FORMED BY OXYGEN AND BY NITROGEN WITH THE SAME METAL. 16 Dec 60, 22p. 8 refs.
Order from SLA $2.60 63-10390

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1938, ser. 5, v. 5, p. 1106-1120.

DESCRIPTORS: *Helium group gases, Chemical reactions *Platinum compounds, *Helium, Hydrogen compounds, Oxygen compounds, Nitrogen compounds, Chemical properties, Physical properties, Microstructure.

(See Also 63-10389)

Engelbrecht, A. and Atzwanger, H.
THE FLUORIDE OF PERCHLORIC ACID: PERCHLORIC FLUORIDE (Das Fluorid der Perchlorsäure - Perchlorylfluorid). [1962] 4p. 1 ref.
Order from SLA $1.10 63-10576

Trans. of Monatshefte für Chemie (Austria) 1952, v. 83, p. 1087-1089.

DESCRIPTORS: *Perchloric acid, *Fluorides, Synthesis, Chemical properties.

Fujii, K.
REACTIONS BETWEEN SODIUM SILICATE SOLUTION AND SODIUM FLUOSILICATE. [1963] 12p.
Order from ATS $16.95 ATS-77Q67J

Trans. of Yogyo Kyokaishi (Japan) 1961, v. 69, no. 5, p. 137-144.

DESCRIPTORS: *Sodium compounds, *Silicates, Solutions, *Fluorides chemical reactions.

Hantzsch, A.
THE CONSTITUTION OF NITRIC ACID, AND ITS NITRONIUM SALTS WITH PERCHLORIC ACID AND WITH SULFURIC ACID. 31 Jan 61, 31p. 33 refs.
Order from SLA $3.60 63-10586

Trans. of [Chemische] Ber[ichte] (Germany) 1925, v. 58, p. 941-961.

DESCRIPTORS: *Nitric acid, *Perchloric acid, *Sulfuric acid, *Nitrogen compounds, Salts, Chemical reactions, Chemical properties, Electrolytes, Absorption, Physical properties.

Keler, E. K. and Kuznetsov, A. K.
THE PREPARATION AND PHYSICAL PROPERTIES OF YTTRIUM OXYORTHOSILICATE $Y_2O[SiO_4]$. [1962] 15p. (figs. refs. tables omitted).
Order from OTS or SLA $1.60 62-20462

Trans. in manuscript of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 2, p. 250-256.

DESCRIPTORS: *Yttrium compounds, Silicates, Synthesis (Chemistry), Reaction kinetics, Physical properties, Additives, Sintering, *Semiconductors, Dielectric properties, *Refractory materials, Thermal expansion, Stability.

Lapitskii, A. V. and Simanov, Yu. P.
LITHIUM SALTS OF ORTHONIOBIC AND ORTHOTANTALIC ACIDS. [1962] 6p. 6 refs.
Order from OTS or SLA $1.10 62-18540

Trans. of Moscow U. Vestnik. [Seriya Fiziko-Matematicheskikh i Estestvennykh Nauk (USSR) 1954 [v. 9] no. 2 [p. 69-72].

DESCRIPTORS: *Lithium compounds, Salts, *Niobates, *Tantalium compounds, Oxides, Acids, Synthesis, Lattices, Density, X-ray diffraction analysis.

Lithium orthoniobate and orthotantalate were synthesized by two methods (giving identical results): (1) by the interaction of lithium carbonate and niobium (tantalum) pentoxide and (2) by the fusion of niobium (tantalum) pentoxide with oithium hydroxide. The lattice constants of both salts were determined. The pycnometric densities of the lithium orthosalts of niobic and tantalic acids were found to be in agreement with their calculated x-ray densities. (Author)

Maquenne, L.
SOME PROPERTIES OF THE ALKALINE-EARTH METALS. [1962] 7p.
Order from SLA $1.10 63-10624

Trans. from Soc[iété] Chim[ique de France. Bulletin] 1892, ser. 3, v. 7.

DESCRIPTORS: *Alkaline earth metals, Chemical properties, Electrolysis, Barium alloys, Mercury alloys, Nitrides, Cyanides, Chemical reactions.

Matsui, Masanao.
REDUCTION WITH COMPLEX METAL HYDRIDES. [1963] 25p.
Order from K-H $25.00 K-H 8524

Trans. of [Nihon] Nogei-Kagakkai Shi (Japan) 1957, v. 31, no. 10, p. 107-118.

DESCRIPTORS: *Reduction (Chemistry), *Hydrides, *Complex compounds, Metallic compounds.

Mazonski, Tadeusz and Hopfinger, Alfred.
THE CATALYTIC PROPERTIES OF THE COMPLEX COMPOUNDS OF ALUMINUM. [1963] 13p.
Order from K-H $13.00 K-H 9033

Trans. of Przemysl Chemiczny (Poland) 1958, v. [14]37, p. 590-592.

DESCRIPTORS: *Catalysts, Chemical properties, *Complex compounds, *Aluminum compounds, *Ziegler catalysts.

Montemartini, C. and Losana, L.
ACTION OF MIXTURES OF OXYGEN AND NITROGEN ON SOME ELEMENTS. 24 Aug 62, 13p. 8 refs.
Order from SLA $1.60 63-10574

Trans. of [Industria Chimica] (Italy) 1926, v. 1, p. 237-240.

DESCRIPTORS: *Oxygen, *Nitrogen, Mixtures, *Magnesium compounds, *Aluminum compounds, *Calcium compounds, *Titanium compounds, *Boron compounds, Oxides, Nitrides, Combustion

Nöth, Heinrich.
INORGANIC REACTIONS OF THE ALKALI BOROHYDRIDES. 15 Feb 61 [45]p. 186 refs.
Order from SLA $4.60 63-10612

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, p. 371-383.

DESCRIPTORS: Chemical reactions, *Alkali metal compounds, *Borohydrides, Synthesis, Chemical elements, Halides, Organic compounds, Valence, Water, Physical properties.

Ruff, Otto.
THE EXISTENCE OF AMMONIUM. [1962] [4]p. (figs. omitted) 6 refs.
Order from SLA $1.10 63-10590

Trans. of [Chemische] Berichte (Germany) 1901, v. 34, p. 2604-2607.

DESCRIPTORS: *Ammonium compouns, Alkali metal compounds, Electrochemistry

Ruff, Otto and Neumann, Franz.
REDUCTION OF INORGANIC HALIDES. II. REDUCTION OF TITRACHLORIDE. [1963] 26p.
Order from K-H $26.00 K-H 5309 j

Trans. of Zeitschrift [für] Anorganische [und] Allgemeine Chemie (East Germany) 1923, v. 128, p. 81-95.

DESCRIPTORS: Inorganic substances, *Halides, *Chlorides, Reduction (Chemistry).

Ruff, Otto.
URANIUM PENTACHLORIDE. Aug 41 [1]p. 1 ref.
Order from SLA $1.10 63-10439

Trans. from [Chemische] Ber[ichte] (Germany) 1909, v. 42, p. 495.

DESCRIPTORS: *Uranium compounds, *Chlorides, Synthesis.

Schafer, Harold and Kahlenberg, Franz.
CONTRIBUTION TO THE CHEMISTRY OF THE ELEMENTS NIOBIUM AND TANTALUM. XXII. THE ENTHALPY OF FORMATION OF TANTALUM CHLORIDE AND THE THERMOCHEMISTRY OF THE CHLORIDES $TaCl_5$, $TaCl_4$, and $TaCl_3$. [1962] 18p. 34 refs.
Order from SLA $1.60 63-10767

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1960, v. 305, p. 178-189.

DESCRIPTORS: Niobium, *Tantalum, *Tantalum compounds, *Chlorides, Thermochemistry, *Enthalpy, Heat of formation.

The enthalpy of formation of tantalum tetrachloride was estimated by determination of the heat of solution: $\Delta H(TaCl_4, 298) = -168.8 \pm 0.5$ kcal/mole. The enthalpy of formation of $TaCl_5$ (s), $TaCl_5$ (g), $TaCl_4$ (s), $TaCl_4$ (g), and $TaCl_3$ (s) as also estimated values of their standard entropies and C_p -functions are given. All the data permit a clear interpretation of the hitherto known experimental results on the lower tantalum chlorides. (Author) (See also 61-25133)

Schmeisser, M. and Brändle, K.
HALOGEN NITRATES AND THEIR REACTIONS: THE CHEMISTRY OF THE POSITIVE OXIDATION STATES OF THE HALOGENS. 14 July 61, 21p. 31 refs.
Order from SLA $2.60 63-10603

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 11, p. 388-393.

DESCRIPTORS: *Halogen compounds, *Chlorine compounds, *Bromine compounds, *Iodine compounds, *Nitrates, Nitrogen compounds, Oxychlorides, Complex compounds, Physical properties, Chemical properties, Chemical reactions

Schmeisser, M. and Fink, W.
INORGANIC ACID FLUORIDES. VII. REACTIONS OF CHLORYL FLUORIDE AND ITS DERIVATIVES. 6 Apr 62, 3p. 3 refs.
Order from SLA $1.10 63-10548

Trans. of Angewandte Chemie (West Germany) 1957, v. 69, p. 780.

DESCRIPTORS: *Chloryl radicals, *Fluorides, Chemical reactions, Inorganic substances, Acids.

Schumacher, H. J. and Sprenger, G.
THE REACTION BETWEEN NITROGEN PENTOXIDE AND OZONE, II. 16 Feb 61, 14p. 9 refs.
Order from SLA $1.60 63-10602

Trans. of Zeitschrift für Physikalische Chemie, Leipzig (Germany) 1929, v. 2B, p. 267-281.

DESCRIPTORS: *Nitrogen compounds, Oxides, *Ozone, Chemical reactions, Pressure, Photographic analysis, Decomposition, Oxidation.

The reaction between nitrogen pentoxide and ozone was investigated in an apparatus which permitted photographic measurement of the reaction mixture and at the same time measuring the pressure. The concentrations of N_2O_5 and O_3 were varied to the widest extent (N_2O_5 = 1 : 120, O_3 = 1 : 200). We succeeded in setting up an equation which represents the reaction course exactly, and in finding a scheme which leads to this equation. (Author)

Schubert, Freidrich and Lang, Konrad.
NEW WAYS OF PREPARING SODIUM BOROHYDRIDE, AND ITS UTILIZATION. 23 Feb 61, 23p. 75 refs.
Order from SLA $2.60 63-10581

Trans. of Angewandte Chemie (West Germany) 1960, v. 72, no. 24, p. 994-1000.

DESCRIPTORS: *Sodium compounds, *Borohydrides, Synthesis, Isotope separation, Sand, Physical properties, Chemical properties, Reduction (Chemistry), Amines, Hydrogenation, Alkyl radicals, Bibliographies.

Schwarz, Robert and Achenbach, Heinz.
NITROGEN PEROXIDE NO_3. [1962] 11p. 22 refs.
Order from SLA $1.60 63-10610

Trans. of [Chemische] Berichte (Germany) 1935, v. 68, p. 343-349.

DESCRIPTORS: *Nitrogen compounds, *Peroxides, Synthesis, Glow dischargers, Chemical analysis

Wannagat, U. and Liehr, W.
HYDRAZINE-SILICON COMPOUNDS. 1 Oct 62, 3p. 2 refs.
Order from SLA $1.10 63-10597

Trans. of Angew[andte] Chem[ie] (West Germany) 1957, v. 69, p. 783.

DESCRIPTORS: *Hydrazines, *Silicon compounds, Benzenes, Ethers, Chemical reactions.

Wiberg, Egon.
MORE RECENT RESULTS OF THE INVESTIGATION INTO THE PREPARATION OF HYDRIDES. [1962] [42]p. 109 refs.
Order from SLA $4.60 63-10571

Trans. of Angewandte Chemie (West Germany) 1953, v. 65, p. 16-33.

DESCRIPTORS: *Hydrides, Chemical reactions, *Synthesis, Amines, Physical properties, Chemical analysis, Chemical bonds, Hydrogen compounds, Aluminum compounds, Boron compounds, Magnesium compounds, Beryllium compounds, Gallium compounds, Lithium compounds, Indium compounds, Thallium compounds, Zinc compounds, Cadmium compounds, Mercury compounds, Copper compounds, Silver compounds, Gold compounds, Hydrogenation, Bibliographies.

Wiberg, Egon and Mödritzer, Kurt.
THE HYDROGENATION OF HALOGEN COMPOUNDS OF GROUP V. VII. THE PREPARATION OF AsH_3(SbH_3, BiH_3) FROM $AsCl_3$($SbCl_3$, $BiCl_3$). [1962] 4p. 2 refs.
Order from SLA $1.10 63-10605

Trans. of Z[eitschrift für]. Naturforsch[ung] (West Germany) 1957, v. 12b, p. 123-125.

DESCRIPTORS: *Halogen compounds, *Group V elements, Hydrogenation, *Arsenic compounds, *Antimony compounds, *Bismuth compounds, Chlorides, Hydrides, Synthesis.

Wiberg, Egon and Noth, Heinrich.
THE HYDROGENATION OF HALOGEN COMPOUNDS OF GROUP V. VIII. "PHOSPHO-ANILINE" $C_6H_5PH_2$. [1962] 4p. 5 refs.
Order from SLA $1.10 63-10609

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1957, v. 12b, p. 125-126.

DESCRIPTORS: *Phosphines, *Anilines, Phenyl radicals, Phosphorus compounds, Chlorides, Lithium compounds, *Borohydrides, *Group V elements, *Halogen compounds, Hydrogenation.

Deals with the reactions of $PhPCl_2$ with $LiBH_4$ in molar ratios of 1:1 and of 1:2. (See also 63-10605)

Wilke-Dörfurt, E[rnest] and Balz, G[ünther].
GENERAL REMARKS ON FLUOBORIC ACID AND THE PROPERTIES OF THE BF_4 ION. Sect. 6 of [Hydrogen Borofluoride] and Its Salts. 11 Feb 49, 3p.
Order from SLA $1.10 63-10049

Partial trans. (p. 221-224) of Z[ei]ts[chrift] f[ür] Anorg[anische] Chemie (Germany) 1927, v. 159, p. 197-225.

DESCRIPTORS: *Fluorides, *Boric acid, *Boron compounds, Ions Hydrolysis, Ammonium, Hydroxides, Chemical properties.

Organic Chemistry

Akashi, Takekazu.
DL-GLUTAMIC ACID IN A NEW CRYSTAL FORM. Rept. 3 of Optical Resolution of DL-Glutamic Acid, its Derivatives and their Salts by the Inoculation Method. [1962] 16p. 5 refs.
Order from SLA $1.60 62-20450

Trans. of [Nihon Kagaku Zasshi] (Japan) 1962, v. 83, p. 528-532.

DESCRIPTORS: *Crystal growth, *Glutamic acid, Crystals, Crystal structure, *Optical analysis, X-ray diffraction analysis, Molecular isomerism, Racemization, Crystallization, Crystal mixers, Chemical compounds, Salts.

(See also: 62-20449)

Akashi, Takekazu.
OPTICAL RESOLUTION OF DL-GLUTAMIC ACID, ITS DERIVATIVES AND THEIR SALTS BY THE INOCULATION METHOD, IV. [1962] 17p. 5 refs.
Order from SLA $1.60 62-20449

Trans. of [Nihon Kagaku Zasshi] (Japan) 1962, v. 83, p. 532-536.

DESCRIPTORS: *Optical analysis, *Glutamic acid, Chemical compounds, Salts, Solubility, Molecular isomerism, Racemization, Crystal mixers, Crystal structures, *Crystal growth.

The solubilities of active isomers and racemic mixtures of pyroglutamic acid and its salts, N-acetylglutamic acid and glutamic acid-γ-methyl ester, which are derivatives of glutamic acid were measured in order to ascertain the composition of the racemic acids. At the same time an experiment was carried out on the possibility of their optical resolution by the inoculation method and the following conclusions were obtained. DL-pyroglutamic acid, ammonium DL-pyroglutamate, calcium DL-pyroglutamate and DL-glutamic acid-γ-methyl ester are racemic compounds, and their resolution by the inoculation method was impossible. N-acetyl-DL-glutamic acid is a racemix mixture, and its resolution was impossible by the inoculation method. (Author) (See also: 62-20450)

Belani, E. and Villach.
PROTECTION OF FAT-CONTAINING AMINOALCOHOL PREPARATIONS AGAINST RANCIDITY (Schutz Fetthaltiger Aminoalkohol-Präparate Gegen das Ranzigwerden). [1962] 7p. 4 refs.
Order from SLA $1.10 63-10524

Trans. of [Fette Seifen Anstrichmittel] (Germany) 1940, v. 47, no. 11, p. 542-543.

DESCRIPTORS: *Fats, *Alcohols, *Amines, *Rancidity, *Preservation, *Ethanols, Storage, Physical properties, Bacteria, Fungi, Fermentation, Oxidation, Additives, Oils.

Bier, G., Lehmann, G., and Leugering, H. J.
BLOCK POLYMERS FROM ETHYLENE AND PROPYLENE. [1962] [10]p. 14 refs.
Order from SLA $1.10 62-18931

Trans. of Makromolekulare Chemie (Switzerland) 1961, v. 44/46, p. 347-357.
Another trans. is available from ATS $9.75 as ATS-37N53G [1961] 9p.

DESCRIPTORS: *Block polymers, Synthesis, *Ethylenes, *Propenes, Physical properties, *Ziegler catalysts, Metalorganic compounds.

According to the method employed by K. Ziegler for the preparation of block polymers from ethylene and propylene utilizing metal-organic mixed catalysts it can be expected that the lifetime of the active ends of the chains is relatively long. Some properties of such polymers are investigated regarding the dependence upon the ratio of the mers, i.e. the length of the blocks, the number of periods and the degree of crystallinity. (Author)

Brand, E., Pellmann, G., and Rieckhoff, K.
PROCESS FOR THE PREPARATION OF 3-(p-AMINOBENZENESULFONAMIDO)-6-METHOXYPYRIDAZINE. [1962] 3p. 2 refs.
Order from OTS or SLA $1.10 63-10069

Trans. of German patent 1,088,061, filed 2 Mar 59, appl. made public and pub. 1 Sep 60, by VEB Farbenfabrik Wolfen.

DESCRIPTORS: Synthesis (Chemistry), Amines, Preparation, *Benzenes, *Sulfonamides, Alkoxy radicals *Pyrimidines, Saponification.

A process for the preparation of 3-(p-aminobenzenesulfonamido)-6-methoxypyridazine from 3-amino-6-methoxypyridazine and 4-acetamidobenzenesulfonyl chloride, is described. The condensation of 1 mole of 3-amino-6-methoxypyridazine with 2 moles of 4-acetamidobenzenesulfonyl chloride is carried out in the presence of a trimethylamine-triethylamine mixture, the 3-[bis-(p-acetamidophenylsulfonyl)-amino]-6-methoxypyridazine is isolated and converted by saponification to 3-(p-aminobenzenesulfonamido)-6-methoxypyridazine. (Author)

Carrara, G.
THE ACTION OF NEUTRAL SOLVENTS ON THE VELOCITY OF FORMATION OF TRIETHYLSULFONIUM IODIDE. [1962] 8p.
Order from SLA $1.10 63-10476

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1894, v. 24, p. 180-189.

DESCRIPTORS: Ethyl radicals, *Sulfonium radicals, *Iodides, Synthesis, Velocity, Reaction kinetics, *Organic solvents.

Chablay, M. E.
THE USE OF METAL AMMONIUMS IN ORGANIC CHEMISTRY: ACTION OF THE METAL-AMMONIUMS UPON THE HALOGEN DERIVATIVES OF METHANE HYDROCARBONS: APPLICATION OF THE DETERMINATION OF HALOGENS IN ORGANIC COMPOUNDS. [1962] 27p. 17 refs.
Order from SLA $4.60 63-10474

Partial trans. of Ann[ales] de Chim[ie] (France) 1914, ser. 9, v. 1, June, p. 469-519.

DESCRIPTORS: *Ammonium compounds, *Sodium compounds, Methanes, *Halocarbons, Chemical analysis

Contents:
Monosubstituted halogen derivatives: Sodammonium and methyl chloride
Bisubstituted halogen derivatives from methane hydrocarbons
Application of metal-ammoniums: New methods of determination of halogens in organic compounds

Dangyan, M. T. and Mesropyan, E. G.
OXIDATION OF ALKYL-β-CHLORALLYLACETIC ACID WITH HYDROGEN PEROXIDE IN AN ACETIC ACID MEDIUM, COMMUNICATION I (Okislenie Alkil-β-Khlorallilуksusnykh Kislot Perekis'yu Vodoroda v Srede Uksusnoi Kislota). [1962] 6p. (foreign text included) 5 refs.
Order from OTS or SLA $1.10 63-10750

Trans. of Akad[emiya] Nauk Armyan[skoi] SSR [Erevan]. Izvest[iya. Seriya] Khim[icheskikh] Nauk, 1961, v. 14 [no. 2] p. 147-149.

DESCRIPTORS: *Alkyl radicals, Chlorine compounds, *Allyl radicals, *Acetic acids, Oxidation, *Hydrogen peroxide.

By oxidizing alkyl-β-chlorallylacetic acid with hydrogen peroxide in acetic acid medium, the corresponding α-alkyl-δ-chloro-δ-hydroxy-δ-valerolactones were obtained with yields of 50% to 65% of theory. (Author)

Demole, E., Lederer, E., and Mercier, D.
SYNTHESIS OF METHYL DIHYDROJASMONATE (METHYL 2-PENTYL-3-OXO-CYCLOPENTYLACETATE). [1962] 10p. 8 refs.
Order from SLA $1.10 62-20120

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1962, v. 45, no. 2, p. 685-692.

DESCRIPTORS: *Methyl radicals, *Pentyl radicals, *Acetates, Synthesis, Molecular structure.

Donrachev, G. A. and Razuvaev, G. A.
REACTION OF DIBENZENECHROMIUM (O) WITH ACRYLONITRILE AND THE MECHANISM OF POLYMERIZATION OF THE LATTER. [1963] 8p.
Order from ATS $12.50 ATS-89Q68R

Trans. of Vysokomolekul[yarnye] Soedin[eniya] (USSR) 1962, v. 4, no. 12, p. 1822-1828.

DESCRIPTORS: *Benzenes, *Chromium, *Acrylonitriles, Chemical reactions, *Polymerization.

Dragunov, S. S., Ryashentsev, K. V., and Yakimov, L. D.
PROCESS FOR THE ISOLATION OF HUMIC ACIDS (Sposob Vydeleniya Gumminovykh Kislot). [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-10194

Trans. of Russian patent 143,399, cl. 12° 27, 12° 14, gr. 50, submitted 30 Dec 60 under 691022-23 (pub. in Byulleten' Izobretenii (USSR) 1961, no. 24).

DESCRIPTORS: Separation, *Humic acids, Water, Solutions, *Amines.

Franta, E. and Rempp, P.
PREPARATION OF SEQUENTIAL COPOLYMERS BY THE ANIONIC METHOD. [1962] 5p. 11 refs.
Order from SLA $1.10 62-20243

Trans. of Acad[emie des] Sci[ences, Paris]. C[omptes] R[endus] (France) 1962, v. 254 [no. 4] p. 674-676 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Polymers, Synthesis, *Copolymerization, Ions, *Vinyl radicals, *Styrenes, *Acrylic resins

A list is compiled of monomers capable of producing sequential copolymers by anionic pooymerization in the homogeneous phase. (Author)

Gordash, Yu. T.
SULPHONATION OF AROMATIC HYDROCARBONS BY THE DIOXANE-SO_3 COMPLEX (Sul'firovanie Aromaticheskikh Uglevodorodov Kompleksom Dioksan-Sul'fotrioksid). Apr 63 [5]p. 7 refs. RTS-2225.
Order from OTS or SLA $1.10 63-15957

Trans. of Akademiya Navuk BSSR [Minsk]. Doklady, 1962, v. 6, no. 4, p. 237-239.

DESCRIPTORS: Hydrocarbons, *Xylenes, *Toluenes, *Mesityl radicals, Benzenes, Methyl radicals, *Naphthalenes, *Sulfonation, Reagents, *Ethylenes, Dioxides, Heterocyclic compounds, *Sulfites.

The study relates to the dioxane complex as used with toluene, the three isomeric xylenes, mesitylene, α-methylnaphthalene, and β-methylnaphthalene; these, apart from m-xylene, have not previously been used with this reagent. Special attention is given to details of methods. (Author)

Haaf, W. and Koch, H.
SYNTHESIS OF CARBOXYLIC ACIDS FROM PARAFFINS BY HYDRIDE TRANSFER. [1963] 15p.
Order from ATS $19.50 ATS-58Q67G

Trans. of [Justus Liebigs] Ann[alen der] Chem[ie] (West Germany) 1960, v. 638, p. 122-135.

DESCRIPTORS: Synthesis, *Carboxylic acids, *Methanes, *Hydrides, Chemical reactions.

Hautecloque, Simone.
RADICAL REACTIONS DURING PHOTOLYSIS OF HEXACHLOROACETONE. [1962] 2p. (figs. refs. omitted).
Order from SLA $1.10 62-20440

Trans. of [Academie des Sciences, Paris]. Comp[tes] Rendus (France) 1962, v. 254 [no. 21] p. 3671-3673 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Chlorine compounds, *Acetones, *Photolysis, Carbon tetrachloride, Ethanes, Production, Reaction kinetics, Heat of activation.

Measurement of velocities of formation of CCl_4 and C_2Cl_6 during the photolysis of hexachloroacetone allows to obtain for the reaction of the removal of Cl by the radical $\cdot CCl_3$ an activation energy $E_3 = 1/2\ E_2 + 7 \pm 1$ kcal/mol, E_2 being the activation energy for the recombination of the $\cdot CCl_3$ radicals. (Author)

Iwakura, Yoshio, Nakajima, Masaki, and Kitani, Eiichi.
SYNTHESIS OF BLOCK COPOLYMER OF POLYAMINOTRIAZOLE AND POLYACRYLONITRILE. [1962] 15p. 5 refs.
Order from SLA $1.60 62-18983

Trans. of Kobunshi Kagaku (Japan) 1962, v. 19, no. 203, p. 161-168.

DESCRIPTORS: *Block polymers, *Amines, *Azoles, *Acrylonitriles, Synthesis, Oxidizers, *Catalysts, Hydrazine derivatives, Iron, Oxidation-reduction reactions.

It was discovered that polymerization takes place when acrylonitrile (AN) is brought into the co-presence of the oxidation-reduction system of acid hydrazide and inorganic oxidizing agent; it was also ascertained that in this instance, Fe^{3+} is best as the oxidizing agent, and some considerations have been presented as to the reasons for this. From polymerization experiments of acrylonitrile using the redox catalyst of acethydrazide and Fe^{3+}, it was estimated that by polymerizing acrylonitrile in a redox system of the terminal acid hydrazide groups of polyaminotriazole (PAT) and Fe^{3+} PAT-PAN block copolymer should form, and this was proved. The copolymer obtained had affinity toward acid dyes, and it was confirmed to be an animalized polyacrylonitrile system copolymer. (Author)

Iwanami, Yasuo.
REACTION OF DIETHYL ACETYLENEDICARBOXYLATE WITH 2,3- AND 1,8- NAPHTHYLENEDIAMINE. Rept. 10 of Reactions of Acetylene Carboxylates with Amines. [1962] 11p. 23 refs.
Order from SLA $1.60 63-10915

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83, no. 5, p. 597-600.

DESCRIPTORS: *Ethyl radicals, *Acetylenes, Carboxylic acids, *Esters, *Naphthalenes, *Amines, Chemical reactions, Infrared spectroscopy

Joussot-Dubrien, Jacques and Faure, Jean.
PHOTOREDUCTION OF THIONINE AND METHYLENE BLUE WITH THE HELP OF NITRILOTRIACETIC AND ETHYLENE DIAMINE TETRACETIC ACIDS. [1962] 2p. (figs. refs. omitted).
Order from SLA $1.10 62-20441

Trans. of [Academie des Sciences, Paris]. Comp[tes] Rendus (France) 1962, v. 254 [no. 17] p. 3090-3092 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Photochemistry, *Chemical indicators, Amides, Thio radicals, Organic azides, *Methylene blue, Reduction (Chemistry), Nitrilo radicals, Ethylenes, Amines, *Acetic acids, Chemical equilibrium.

Kamai, Gil'm and Khismatullina, L. A.
THE PREPARATION OF AN ASYMMETRIC PHOSPHONIUM COMPOUND CONTAINING DIFFERENT ALIPHATIC GROUPS (O Poluchenii Asimmetricheskogo Fosfonievogo Soedineniya s Razlichnymi Alifaticheskimi Radikalami). Apr 63 [8]p. 5 refs. RTS-2228.
Order from OTS or SLA $1.10 63-15969

Trans. of #Zhur[nal] Obshch[ei] Khim[ii] (USSR) 1956, v. 26, no. 12, p. 3426-3430.

DESCRIPTORS: *Phosphonium radicals, Chlorides, Bromides, *Phosphines, Synthesis, Alkyl radicals, Ethyl radicals, Butyl radicals, Benzyl radicals, Allyl radicals.

Some new phosphines and phosphonium salts were prepared and studied. Ethyl-n-butylbenzylallylphosphonium bromide - a phosphonium compound with different alkyl groups - was synthesized for the first time. An attempt to resolve it into optically active components was unsuccessful. (Author)

Kleinfeller, H.
THE PEROXIDES OF TRANS-DECALIN (ACCORDING TO TESTS BY C. ODEFEY). [1962] 2p. (formulae omitted) 2 refs.
Order from SLA $1.10 62-20463

Trans. of Angewandte Chemie (West Germany) 1950, v. 62, p. 342.

DESCRIPTORS: *Naphthalines, *Decalin, *Peroxides, Synthesis, Chemical analysis, Molecular isomerism.

Kolesnikov, I. M., Panchenkov, G. M., and Orlova, A. A.
KINETICS OF THE ALKYLATION OF TOLUENE WITH PROPYLENE OVER AN ALUMINOSILICATE CATALYST. [1963] 8p.
Order from ATS $10.50 ATS-00Q68R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 9, p. 1-8.

DESCRIPTORS: Reaction kinetics, *Alkylation, *Toluenes, Propenes, *Catalysts, *Aluminum compounds, *Silicates.

Kolesnikov, G. S. and Klimentova, N. V.
TRIBUTYLBORON: A CATALYST FOR THE POLYMERIZATION OF UNSATURATED COMPOUNDS [Tributilbor: Katalizator Polimerizatsii Nenasyschchennykh Soedinenii]. [1962] 3p. 2 refs.
Order from OTS or SLA $1.10 63-10633

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1957 [no. 5] p. 652-653. Other translations are available from LC or SLA mi$1.80, ph$1.80 as 59-15939 [1959] 3p.; 61-10463 [1960] 4p.; in French as CEA-tr-R365, 10 May 58, 4p.; and from OTS or SLA $1.10 as 62-10560 [1961] 2p.

DESCRIPTORS: Styrenes, Ethylenes, Acrylonitriles, Polymerization, *Catalysts, *Boron, *Butyl radicals, Catalysis.

For abstract see Technical Translations 2: 334, 1959.

Komori, Saburo; Arasugi, Ei and others.
PROPERTIES OF NORMAL ALKYL VINYL ETHER AND POLYMERIZATION. [1963] 15p.
Order from K-H $15.00 K-H 12427 b

Trans. of Kogyo Kagaku Zasshi (Japan) 1956, v. 59, p. 1132-1134.

DESCRIPTORS: Ethers, *Vinyl radicals, *Alkyl radicals, Polymerization.

Korshak, V. V., Rogozhin, S. V., and Volkov, V. I.
STUDIES IN THE FIELD OF CO-ORDINATION POLYMERS. VIII. POLYMERS BASED ON AROMATIC o,o'-DICARBOXYLIC ACIDS AND DIVALENT METALS. 25 Oct 62, 14p. 15 refs. [Trans] T. 1401; [DSIR] NLL M. 10007.
Order from OTS or SLA $1.60 63-15215

Trans. of Vysokomolekularnye Soedineniya (USSR) 1961, v. 3, no. 12, p. 1808-1815.

DESCRIPTORS: *Polymers, *Complex compounds, Synthesis, *Carboxylic acids, Phthalic acids, Metals, Copper, Zinc, Nickel, Cobalt, Cadmium, Beryllium, Chemical properties, Physical properties, Chemical bonds.

Polymers containing Cu, Zn, Ni, Co, Cd and Be were prepared from 2, 5-dihydroxyterephthalic, 4, 4'-dihydroxytriphenylmethane-3, 3'-dicarboxylic, 4, 4'-dimethoxytriphenylmethane-3, 3'-dicarboxylic acids and the dimethyl ester of 4, 4'-dihydroxytriphenylmethane-3, 3'-dicarboxylic acid, and certain of their properties were determined. It was shown that the reaction conditions affect the composition of the resulting products. The polymers prepared from a solution and from a melt of the starting compounds correspond most closely to the calculated composition of the repeat unit. The influence of the carbonyl oxygen atoms of the carboxyl groups and that of the oxygen atoms of the hydroxy acid hydroxyl groups in the formation of co-ordination bonds are shown. (Author) (See also 60-22946)

Köster, R. and Griaznov, G.
SELECTIVE HYDROBORATION OF OLEFINS. 5 Apr 61, 3p. 3 refs.
Order from SLA $1.10 63-10565

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73, no. 5, p. 171.

DESCRIPTORS: *Ethylenes, *Organoboranes, Synthesis, Diboranes, Borohydrides.

Köster, R.
SIMPLE METHOD OF PREPARING ALKYL BORIC ACID ESTERS (ALKYL ALKOXYBORANES). 28 May 59, 2p. 5 refs.
Order from SLA $1.10 63-10564

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, p. 31-32.

DESCRIPTORS: *Alkyl radicals, *Boric acids, Esters, *Organoboranes, *Alkoxy radicals, Synthesis.

Koster, Roland.
BORON COMPOUNDS. I. PREPARATION OF TRIALKYL BORINES (BORTRIALKYLS) AND THEIR REACTIONS WITH OLEFINS. [1963] 21p.
Order from K-H $21.00 K-H 9539

Trans. of [Justus] Liebigs Annalen der Chemie (West Germany) 1958, v. 618 [no. 1/3] p. 31-43.
Another trans. is available from SLA mi $2.70, ph$4.80 as 60-14310 [1960] 21p.

DESCRIPTORS: *Boron compounds, Alkyl radicals, Chemical reactions, *Ethylenes, Synthesis (Chemistry).

For abstract see Technical Translations 3: 705, 1960.

Koster, Roland and Kroll, Wolf-Rainer.
POTASSIUM CHLORIDE COMPLEXES OF DIALKYL ALUMINUM CHLORIDE AND THEIR CLEAVAGE. [PT. 31 of Metalloorganic Compounds]. [1963] 4p.
Order from K-H $4.00 K-H 10024#10

Trans. of [Justus] Liebigs Annalen der Chem[ie] (West Germany) 1960, v. 629 [no. 1/3] p. 50-52.
Another trans. is available from SLA $1.10 as 61-20454 [1961] 4p.

DESCRIPTORS: *Metalorganic compounds, Complex compounds, *Aluminum compounds, *Potassium compounds, *Chlorides, *Alkyl radicals, Chemical reactions.

Klndig, W., Neukom, H., and Deuel, H.
[INVESTIGATIONS] OF [GRAIN] MUCINS. I. CHROMATOGRAPHIC FRACTIONATION OF WATER SOLUBLE WHEAT FLOUR PENTOSANS WITH DIETHYL-AMINOETHYL-CELLULOSE. [1962] [7]p. (refs. omitted).
Order from SLA $1.10 62-20442

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1961, v. 44, no. 3, p. 823-829.

DESCRIPTORS: Cereals, *Mucin, *Wheat, Gels, Fractionation, Chromatographic analysis, Cellulose, *Pentoses, Ethyl radicals, Amines, *Polysaccharides.

The water soluble non-starchy polysaccharides of a wheat flour (Manitoba II) have been fractionated on a DEAE-cellulose column. Five completely separated fractions were obtained. Fraction 1 was a pure arabinoxylan. Fractions 2 to 5 were glycoproteins; their polysaccharide constituents were composed of the following sugars respectively: xylose, arabinose, and galactose (each of the fractions 2, 4, and 5), and galactose and arabinose (fraction 3). (Author)
(See also 62-10258)

Kunori, Masao.
REACTION OF 1-METHYL-INDOLE WITH SULFURYL CHLORIDE OR BROMINE. Rept. 6 of Studies in Indole Links. [1962] 10p. 6 refs.
Order from SLA $1.10 62-18930

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83 [no. 7] p. 839-841.

DESCRIPTORS: *Indoles, Methyl radicals, Cyano radicals, Chemical bonds, Chemical reactions, Catalysts, Sulfonyl radicals, Chlorides, Bromides.

Kurdyumov, G. M. and Semenenko, K. N.
COMPOUNDS OF BERYLLIUM OXYBENZOATE WITH AROMATIC HYDROCARBONS. [1963] 15p.
Order from K-H $15.00 K-H 12464

Trans. of *Zhurnal Neorganicheskoi Khimii (USSR) 1962, v. 7, no. 9, p. 2115-2121.

DESCRIPTORS: *Beryllium compounds, Salicylates, Hydrocarbons, *Metalorganic compounds.

Langenbeck, W. and Pritzkov, W.
MECHANISM OF PARAFFIN OXIDATION, I. [1962] [25]p. 27 refs.
Order from SLA $2.60 63-10787

Trans. of [Fette Seifen Anstrichmittel] (West Germany) 1953, v. 55, no. 7, p. 435-440.

DESCRIPTORS: *Oxidation, *Methanes, Ketones, Fatty acids, Hydroperoxides, Chemical reactions, Catalysis, Manganese, Decomposition.

Loop, Werner.
PROCESS FOR THE PREPARATION OF 4-BENZENE-SULFONAMIDOPYRIMIDINES. [1962] 9p. 1 ref.
Order from OTS or SLA $1.10 63-10077

Trans. of German patent 949,469, cl. 12p, gr. 7/01, internat'l cl. C 07D, N 5573/1Vb/12p, by Nordmark-Werke G. m. b. H., pat. 27 May 52, appl. made public 29 Mar 56, grant made public 30 Aug 56, issued 20 Sep 56.

DESCRIPTORS: Synthesis (Chemistry), *Pyrimides, *Benzenes, *Sulfonamides, Sulfonyl radicals, Halides, Hydrogen, Binders, Substitution reactions.

Loop, Werner.
PROCESS FOR THE PREPARATION OF BIS (BENZENESULFONYL)-4-(or 6)-AMINOPYRIMIDINES FROM 4-(or 6)-AMINOPYRIMIDINES. [1962] 8p. 3 refs.
Order from OTS or SLA $1.10 63-10070

Trans. of German patent 881,345, cl. 12 p, gr. 7 ol, p46,001 iVc/12pD, by Nordmark-Werke G. m. b. H, pat. 16 June 49, appl. made public 7 Sep 50, grant made public 13 May 53, issued 29 June 53.

DESCRIPTORS: Processing, Synthesis (Chemistry), *Benzenes, *Pyrimidines, *Sulfonyl radicals, *Amines, Halides, Hydroxides, Organic solvents, Substitution reactions.

Man'kovskaya, N. K. and Oleinikova, Z. V.
FACTORS INFLUENCING THE SETTLING OF UNSAPONIFIABLES IN THE MANUFACTURE OF SYNTHETIC FATTY ACIDS. [1963] 7p.
Order from ATS $9.75 ATS-05Q68R

Trans. of Maslob[oino]-Zhir[ovaya] Prom[yshlennost'] (USSR) 1958, v. 24, no. 12, p. 17-20.

DESCRIPTORS: *Fatty acids, Synthesis, Saponifiation, Sedimentation.

Martynov, V. F. and Titov, M. I.
USE OF THE DARZENS REACTION FOR THE SYNTHESIS OF 2-FLUORO-β-HYDROXY ACIDS. Pt. 1 of Organofluorine Compounds. 27 June 62 [6]p. 3 refs.
Order from OTS or SLA $1.10 62-18997

Trans. of #Zhur [nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 3] p. 718-721.

DESCRIPTORS: *Fluorine compounds, *Hydroxides, Acids, Esters, Synthesis, Ethyl radicals, Acetates, Organic compounds, Fluorine.

A new-method was developed for the synthesis of esters of α-fluoro-β-hydroxy acids, by condensation of ethyl fluoracetate with carbonyl compounds under the conditions of the Darzens reaction. (Author) (See also 61-18686)

Mikhailov, B. M. and Chernov, N. G.
THE STRUCTURE OF ORGANIC COMPOUNDS OF ALKALINE METALS: LITHIUM-AROMATIC COMPOUNDS AND THEIR ETHERATES. [1962] 8p. (figs. formulae omitted) 4 refs.
Order from OTS or SLA $1.10 62-18668

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 78, no. 3, p. 489-492.

DESCRIPTORS: *Complex compounds, *Alkali metal compounds, Molecular structure, *Lithium compounds, Phenyl radicals, Napthyl radicals, Ethers, Esters, Synthesis, Chemical analysis.

Mitrofanova, E. V., Artemov, A. N., and Petukhov, G. G.
REACTIONS OF TRIPHENYLALUMINUM WITH TITANIUM HALIDES IN A SOLUTION OF FLUOROBENZENE AND DEUTEROBENZENE. 15 June 62, 7p. 8 refs.
Order from OTS or SLA $1.10 63-10841

Trans. of #Zhur[nal] Obshchei Khimii (USSR) 1960, v. 30, no. 7, p. 2138-2141.
Another trans. is available from ATS $7.10 as ATS-07M47R [1961] 4p.

DESCRIPTORS: *Ziegler catalysts, Complex compounds, *Phenyl radicals, *Aluminum compounds, Chemical reactions, *Titanium compounds, *Halides, Chlorides, Oxychlorides, *Fluorine compounds, *Deuterated compounds, *Benzenes, Solutions.
In the polar solvent, fluoro benzene, triphenylaluminum reacts with the titanium halides, $TiCl_4$ and $TiOCl_2$, without giving rise to the formation of free radicals. The reaction product is diphenyl, which is formed by the decomposition of the initial complex. The solvent does not participate in the reaction. The titanium halides, $TiCl_4$, $TiOCl_2$ and $TiCl_3$, react with triphenyl aluminum in the solution of deuterobenzene to form deuterated diphenyl by the reaction of H-D exchange of diphenyl with deuterobenzene. The greatest H-D exchange is given by tetravalent titanium compounds. (Author)

Nenitzescu, Costin D. and Dragan, Alexander.
ON THE INFLUENCE OF ALUMINUM CHLORIDE UPON n-HEXANE AND n-HEPTANE, ALONE AND IN PRESENCE OF HALOGEN DERIVATIVES: A CONVERSION OF PARAFFINE-HYDROCARBONS INTO CYCLOPARAFINE HYDROCARBONS. Treatise 8 on Catalytic Reactions by Means of Aluminum Chloride. [1962] 10p. 16 refs.
Order from SLA $1.10 63-10454

Trans. of [Chemische] Berichte (Germany) 1933, v. 66, p. 1892-1900.

DESCRIPTORS: *Catalysts, *Aluminum compounds, *Chlorides, *Hexanes, *Heptanes, *Halogen compounds, Acetyl radicals, Hydrocarbons, Monocyclic compounds.

Nöth, H.
REACTIONS OF HYDRAZINE AND ITS METHYL AND PHENYL DERIVATIVES WITH BORON COMPOUNDS. 26 Oct 62. 3p.
Order from SLA $1.10 63-10619

Trans. of Angewandte Chemie (West Germany) 1960, v. 72, p. 40.

DESCRIPTORS: *Hydrazines, Hydrazine derivatives, *Methyl radicals, *Phenyl radicals, *Boron compounds, *Organoboranes, Chemical reactions

Nöth, Heinrich.
CLEAVAGE OF THE Si-N BOND BY LEWIS-ACID BORON COMPOUNDS. PT. 13 of Contributions to the Chemistry of Boron. 27 Sep 62, 7p. 5 refs.
Order from SLA $1.10 63-10611

Trans. of Z[eitschrift für] Naturforschung (West Germany) 1961, v. 16b, p. 618-620.

DESCRIPTORS: *Boron compounds, Hydrides, Halides, Borohydrides, Acids, *Organoboranes, *Silanes, *Chemical bonds, Silicon, Nitrogen.

Nowakowska, M.
PROBLEMS CONCERNING COPOLYMERIZATION OF ETHYLENE WITH OTHER UNSATURATED COMPOUNDS CATALYZED BY ORGANOMETALLIC COMPLEXES. [1963] 12p.
Order from ATS $14.75 ATS-27Q68P

Trans. of Wiadomosci Chem[iczne] (Poland) 1962, v. 16, no. 5, p. 307-319.

DESCRIPTORS: *Ethylenes, *Copolymerization, Catalysis, Metalorganic compounds.

Okamura, S. and Urakawa, N.
STUDY OF EMULSION POLYMERIZATION AT ROOM TEMPERATURE. PT. 1. EMULSION POLYMERIZATION OF VINYL ACETATE AT ROOM TEMPERATURE. [1963] 5p.
Order from ATS $7.50 ATS-60Q67J

Trans. of Kobunshi Kagaku (Japan) 1950, v. 7, p. 204-207.

DESCRIPTORS: *Colloids, *Polymerization, *Vinyl radicals, *Acetates.

Oskaja, V. and Vanags, G.
CONDENSATION OF PHTHALIC ANHYDRIDE WITH PHENYLACETIC ACID IN A SOLUTION OF TRIETHYLAMINE AND ACETIC ANHYDRIDE. [1963] 10p.
Order from ATS $14.50 ATS-96Q68R

Trans. of [Akademiya Nauk Latviiskoi SSR, Riga. Izvestiya] 1961, no. 3(164), p. 67-76.

DESCRIPTORS: *Phthalic anhydrides, Condensation reactions, *Phenyl radicals, *Acetic acids, Solutions, *Amines, Ethyl radicals, *Acetic anhydrides.

Pilc, A., Osmolski, H., and Rybacki, L.
PREPARATION OF DIPHENYL ETHER FROM PHENOLATES AND CHLOROBENZENE. [1963] 6p.
Order from ATS $10.00 ATS-55Q67P

Trans. of Przemysl Chem[iczny] (Poland) 1950, v. 6[29] no. 4, p. 194-197.

DESCRIPTORS: *Phenyl ethers, Synthesis, *Phenols, Esters, *Benzenes, *Chlorides.

Posternak, Theodore.
RESEARCH ON THE CYCLITOL SERIES XIV, NITROUS ACID DEAMINATION OF AMINO-CYCLITOLS: SYNTHESIS OF D,L-VI-BURNITOL AND COMPLETE NEW SYNTHESIS OF MESO-INOSITOL. [1961] 20p. 27 refs.
Order from SLA $1.60 61-20429

Trans. of Helvetica Chimica Acta (Switzerland) 1950, v. 33, p. 1597-1605.

DESCRIPTORS: Nitrous radicals, Organic acids, Decomposition, Amines, Synthesis, Methyl radicals, *Clyclohexanols, Glucose, Reduction, Oximes, *Inositols, Vitamin B complex, Reaction kinetics.

Puchot, E.
INVESTIGATIONS UPON BUTYLENE AND ITS DERIVATIVES (REVIEW). [1962] 2p.
Order from SLA $1.10 63-10425

Trans. of [Chemische] Ber[ichte] (Germany) 1883, v. 16, p. 2284 (orig. article pub. in Ann[ales de] Chim[ie et de] Phys[ique] (France) [1883] ser. 5, v. 28, p. 508-569).

DESCRIPTORS: *Butenes, Chemical properties, Physical properties.

Rakuzin, M. A.
A NEW STAGE IN THE HISTORY OF THE DEVELOPMENT OF THE CHOLESTERIN QUESTION IN PETROLEUM CHEMISTRY. [1962] 9p. 28 refs.
Order from SLA $1.10 63-10698

Trans. of Petr[oleum] Z[eitschrift] (Austria) 1928, v. 24, 20 July, p. 898-902.

DESCRIPTORS: *Cholesterol, *Petroleum, Chemistry.

Reichenbach, Ilse.
ON THE QUESTION OF CATALYZERS IN THE METHANOL SYNTHESIS. [1962] 6p.
Order from SLA $1.10 63-10422

Trans. of Metallbörse (Germany) 1929, v. 19, p. 2861-2862.

DESCRIPTORS: *Catalysts, *Methanols, Synthesis, Copper.

Riemschneider, Randolph.
RESEARCHES ON THE CHEMISTRY OF THE DIENE GROUP. [1962] 4p. 9 refs.
Order from SLA $1.10 63-10632

Trans. of mono. International Congress of Entomology (no. 10) [Montreal, 17-25 Aug] 1956. Proceedings [1958] p. 229-230.

DESCRIPTORS: *Insecticides, *Diene synthesis, *Halocarbons, Chemical reactions, Molecular structure.

Rothmann, Albert.
PROCESS FOR THE PREPARATION OF THERAPEUTICALLY USEFUL COMPOUNDS OF p-AMINOBENZENESULFONE HYDRAZIDE, tr. by P. C. C. 15 Oct 62, 5p.
Order from OTS or SLA $1.10 63-13002

Trans. of German patent 901,650, cl. 12q, gr. 6/03, by Albertine Marie Elisabeth Rothmann and Albert Rothmann, pat. from 7 Apr 43, appl. announced 30 Apr 53, grant announced 26 Nov 53, pub. 14 Jan 54.

DESCRIPTORS: Processing, Synthesis (Chemistry), *Drugs, Preparation, *Amides, *Benzenes, *Sulfones, *Hydrazines, Acyl radicals, Halides, Substitution reactions, Acetylation.

Shingu, Haruo.
COMPARISON BETWEEN OXYGEN METHOD AND AIR METHOD IN SYNTHESIS OF ETHYLENE OXIDE BY OXIDATION OF ETHYLENE. [1962] [13]p. 25 refs.
Order from SLA $1.60 62-20351

Trans. of mono. Japan Petroleum Institute, meeting of 26-27 Sep 60, Tokyo. Proceedings, p. 89-95.

DESCRIPTORS: Synthesis, *Ethylene oxide, *Oxidation, *Ethylenes, Catalysis, Reaction kinetics.

Späth, Ernst, Lorenz, Rudolf, and Freund, Else.
DERIVATIVES OF ALDOL AND CROTONALDEHYDE. Rept. 11 of Contribution to the Knowledge of the More Important Aldols. [1962] [25]p. 24 refs.
Order from SLA $2.60 62-18701

Trans. of [Chemische] Berichte (Germany) 1944, v. 76 [no. 12] p. 1196-1208.

DESCRIPTORS: *Acetaldehydes, *Crotonic acid, Aldehydes, Decomposition, *Condensation reactions, Aliphatic compounds, Dioxides, Ethylenes, Heterocyclic compounds, Butyl radicals, Molecular isomerism, Methyl proprionates, *Dissociation.

Suvorov, N. N., Preobrazhenskaya, M. N., and Uvarov, N. V.
NEW METHOD TO SYNTHESIZE α-METHYLTRYPTAMINE. Pt. 13 of Indole Derivatives. [1962] 9p. 9 refs.
Order from OTS or SLA $1.10 62-18920

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 5] p. 1567-1572.

DESCRIPTORS: *Drugs, *Indoles, Propyl radicals, *Amines, Synthesis (Chemistry), Piperidine derivatives, Molecular isomerism, Methyl radicals.

A method has been worked out for the synthesis of 3-carbetoxy-6-methylpiperidone-2, from which δ-methyltryptamines can be synthesized, with substitutes in the benzene nucleus, by using substituted anilines. It has been shown that the phenylhydrazone of 6-methylpiperidine-2, 3-dione occurs in the form of two geometric isomers (syn- and anti- forms). (Author)

Tchitchibabine.
PHOSPHORIC ACID AS A CONDENSING AGENT: ALKYLATION OF PHENOLS AND THEIR ETHERS. [1962] 3p.
Order from SLA $1.10 63-10447

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1934, v. 198, p. 1239 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Phenols, Ethers, Condensation reactions, *Phosphoric acids.

Vainshtein, F. M., Shilov, E. A., and Grishin, O. M.
ON THE PROBLEM OF THE HYDROGEN ISOTOPE EFFECT IN HALOGENATION OF AROMATIC COMPOUNDS. [1962] [5]p. 14 refs.
Order from OTS or SLA $1.10 63-13713

Trans. of Vsesoyuz[noe] Khim[icheskoe] Obshchestvo. Zhur[nal] (USSR) 1960, v. 5 [no. 1] p. 119-120.

DESCRIPTORS: Isotopes, *Deuterium, *Tritium, *Halogenation, Phenols, Hydrogen, Amines.

Valderazzo, F. and Calvi, P. L.
THE VANADIUM (0) -π-TROPYLIUM-π-CYCLOHEPTATRIENE CATION $[V(C_7H_7)\ (C_7H_8)]^+$. [1963] 12p.
Order from K-H $12.00 K-H 12589

Trans. of la Chimica e l'Industria (Italy) 1962, v. 44 [no. 11] p. 1217-1219.
Another trans. is available from CTS(Chem) $9.60 subsequent copies $1.60/ea. as CTS(Chem)-319, Jan 63, 2400 words.

DESCRIPTORS: *Metalorganic compounds, Complex compounds, *Vanadium compounds, *Cycloheptatriene derivatives, Synthesis (Chemistry), Ions.

Voswinkel, A.
o-DIETHYLBENZENE. 1943, 2p.
Order from SLA $1.10 63-10442

Condensed trans. of [Chemische] Ber[ichte] (Germany) 1888, v. 21, p. 3499-3501.

DESCRIPTORS: *Ethyl radicals, *Benzenes, Synthesis, Physical properties, Salts.

Weinstein, F. M., and Shilov, E. A.
SIGNIFICANCE OF THE KINETIC ISOTOPE EFFECT IN THE THEORY OF HYDROGEN SUBSTITUTION IN AROMATIC SYSTEMS. [1962] [7]p. 17 refs.
Order from OTS or SLA $1.10 63-13722

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 133, no. 3, p. 581-584.

DESCRIPTORS: Amines, *Halogenation, *Isotopes, *Reaction kinetics, Anilines, Benzoates, Sulfonates, Methyl radicals, Hydrogen.

Will, W.
HEXANITROETHANE. 16 Nov 61, 6p. 8 refs.
Order from SLA $1.10 63-10600

Trans. of Chemische Berichte (Germany) 1914, v. 47, p. 961-965.

DESCRIPTORS: *Nitrogen compounds, *Ethanes, Nitration, Synthesis, Explosives, Chemical properties, Decomposition.

Physical Chemistry

Bogdanova, O. K., Balandin, A. A., and Belomestnykh, I. P.
EFFECT OF THE STRUCTURE OF ALKYLAROMATIC HYDROCARBONS ON THEIR DEHYDROGENATION KINETICS. [1963] 6p.
Order from ATS $6.50 ATS-22Q68R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 146, no. 6, p. [1327]-1330.

DESCRIPTORS: *Alkyl radicals, *Hydrocarbons, *Reaction kinetics, *Dehydrogenation.

Croatto, Ugo and Bruno, Costanza.
GALVANIC PILES WITH SOLID ELECTROLYTES. [1962] [16]p. 19 refs.
Order from SLA $1.60 63-10618

Trans. of Ricerca Scientifica (Italy) 1947, v. 17, no. 12, p. 1998-2005.

DESCRIPTORS: *Electrolytes, Diffusion, *Batteries and components, *Electrochemistry, Decomposition, Chemical properties

Czekalla, J. and Mager, K. J.
THE INFLUENCE OF COMPLEX FORMATION ON SINGLET-TRIPLET TRANSITIONS OF AROMATIC HYDROCARBONS. [1962] 10p. (figs. tables refs. omitted).
Order from SLA $1.10 63-10892

Trans. of Zeitschrift für Elektrochemie (West Germany) 1962, v. 66, no. 1, p. 65-73.

DESCRIPTORS: *Complex compounds, Naphthalene, Phenanthrene, Polycyclic compounds, Benzenes, Methyl radicals, *Chemical bonds, *Phosphorescence, Absorption spectrum

The phosphorescence spectra of naphthalene, phenanthrene, coronene, durene, and hexamethyl benzene complexes are employed to study: (1) the influence of the electron acceptor in singlet-triplet transitions; (2) the influence of complex formation of symmetrically-permitted and symmetrically-prohibited singlet-triplet transitions; and, (3) the dependence of fading times on concentration and excitation wavelength.

Damianovich, Horacio.
THE CHEMISTRY OF HELIUM AND THE TRANSMUTATION OF THE ELEMENTS. 20 June 61, 12p. 3 refs.
Order from SLA $1.60 63-10338

Trans. of Soc[iedad] Cient[ifica] Argentina. Anales, 1963, v. 122, p. 339-348.

DESCRIPTORS: *Helium, Helium compounds, Platinum compounds, Nitrides, Pyrolysis, Minerals, *Atomic transmutation.

Damianovich, Horacio.
MICROSTRUCTURE OF PLATINUM SUBMITTED TO THE ACTION OF HELIUM, OXYGEN, AND HYDROGEN UNDER THE INFLUENCE OF ELECTRIC DISCHARGES. 27 Dec 61, 4p.
Order from SLA $1.10 63-10106

Trans. of Soc[iedad] Cient[ifica Argentina. Seccion] Santa Fe. Anales, 1934, v. 6, p. 20-22.

DESCRIPTORS: Microstructure, *Platinum, Electrodes, *Helium, *Oxygen, *Hydrogen, *Electric discharges, Electrochemistry.

Damianovich, Horacio.
PLATINUM-HELIUM COMPOUND: PROBABLE SIZE OF THE COLLOIDAL PARTICLES. 21 Dec, 2p.
Order from SLA $1.10 63-10107

Trans. of Soc[iedad] Cient[ifica Argentina. Seccion] Santa Fe. Anales, 1934, v. 6, p. 17-19.

DESCRIPTORS: *Platinum compounds, *Helium compounds, Colloids, Size.

Delimarskyi, U. K.
GALVANIC CELLS OF THE DANIELL TYPE IN MOLTEN BROMIDES. [1962] 14p.
Order from K-H $17.50 K-H 3485 d

Trans. of Akademiya Nauk URSR [Kiev]. Inst[ytut] Khim[ii]. Zapysky, 1946, v. 8, p. 23-31.

DESCRIPTORS: *Electrochemistry, *Batteries and components, Fuzed materials, Salts, *Bromides.

Dushin, Yu. A.
THE RATE OF DECOMPOSITION (COMBUSTION) OF POLYMERS IN A HIGH-TEMPERATURE GASEOUS MEDIUM. [1962] [3]p. 2 refs. [DSIR] NLL M. 8992.
Order from OTS or SLA $1.10 63-15230

Trans. of Inzhenerno Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 10, p. 123-126.
An unedited rough draft trans. is available from OTS or SLA $1.10 as 62-33369, FTD-TT-62-716, 18 June 62 [8]p.

DESCRIPTORS: *Polymers, Decomposition, *Combustion, Reaction kinetics, Gases, High temperature research.

The paper is devoted to the calculation of rates of decomposition of polymers in a high-temperature gaseous medium. Results of calculations are checked experimentally. (Author)

Evstigneev, V. B. and Terenin, A. N.
PHOTOELECTROCHEMICAL EFFECT OF PHTHALOCYANINES, CHLOROPHYLL, AND PHEOPHYTIN [Fotoelektrokhimicheskii Effekt Ftalotsyaninov, Khlorofilla i Feofitina]. [1963] 5p.
Order from ATS $6.75 ATS-45068R

Trans. of Akad[emiya] Nauk SSSR. Dokl[adv] 1951, v. 81, no. 2, p. 223-226.
Another trans. is available from National Research Council, Ottawa, Canada, as NRCC TT-331.

DESCRIPTORS: Electrochemistry, Photochemistry, *Phthalocyanines, *Chlorophylls, *Pheophytins.

Fastovskii, V. G. and Gurvich, Y. G.
INVESTIGATION OF THE EQUILIBRIUM BETWEEN LIQUID AND GAS IN THE BINARY SYSTEM OXYGEN-KRYPTON. [1960] 11p.
Order from ATS $14.45 ATS-53M47G

Trans. of Acta Physicochim[ica] U. R. S. S. 1939, v. 11, no. 6, p. 883-898.

DESCRIPTORS: *Oxygen, *Krypton, Liquids, Gases, Chemical equilibrium.

Flood, H., Krog, Th., and Sorum, H.
THE Ag_2O - V_2O_5 SYSTEM. Pt. 2 of Concerning Vanadyl-Vanadates: [A New Type of Electrical Semi-Conductor]. [1962] 12p. 2 refs.
Order from SLA $1.60 62-20222

Trans. of Tidsskrift for Kjemi, Bergvesen og Metallurgi (Norway) 1946, no. 3, p. 32-36.

DESCRIPTORS: *Semiconductors, Vanadates, *Silver compounds, *Vanadium compounds, Oxides, Phase studies, Chemical reactions, Crystal structure, Electrical conductance, Chemical analysis, Calorimetry, X-ray diffraction analysis.

(See also 62-20223)

Flood, H., Krog, Th., and Sorum, H.
THE Li_2O - V_2O_5 SYSTEM. Pt. 3 of [Concerning] Vanadyl-Vanadates: [A New Type of Electrical Semi-Conductor]. [1962] 11p. 5 refs.
Order from SLA $1.60 62-20224

Trans. of Tidsskrift for Kjemi, Bergvesen og Metallurgi (Norway) 1946, no. 5, p. 59-62.

DESCRIPTORS: *Semiconductors, Vanadates, *Lithium compounds, *Vanadium compounds, Oxides, Phase studies, Chemical reactions, Crystal structure, Electrical conductance, Chemical analysis, Calorimetry, X-ray diffraction analysis.

(See also 62-20222)

Gonikberg, M. G.
CHEMICAL EQUILIBRIA AND REACTION RATES AT HIGH PRESSURES, 2D ED. REV., tr. by Michael Artman. 1963, 212p. 487 refs. PL-480 NASA; NASA TT-F-95.
Order from OTS $2.25 62-11033

Trans. of mono. Khimicheskoe Ravnovesie i Skorost' Reaktsii pri Vysokikh Davleniyakh, 2 ed. rev., Moscow, 1960 [272p.].

DESCRIPTORS: *High pressure research, *Chemical equilibrium, *Reaction kinetics, *Phase studies, Ammonia, Methanols, Ethylenes, Hydrocarbons, Carbon dioxide, Coal, Nitrogen, Iron compounds, Nitrides, Formic acids, Benzoic acids, Hydrogen compounds, Iodides, Vinyl chlorides, Cyclohexanes, Propionic acids, Adipic acids, Diene synthesis, Esters, Phenols, Diamonds, Bibliographies.

The subject of the present book is the discussion of the various scientific aspects of applying high pressures in chemical reactions. It clearly could not include all or even most studies of chemical transformations at high pressures. The task of the author was to attempt to present the main laws governing chemical reactions under pressure. This has been exemplified on several reactions of inorganic and mainly of organic chemistry. It should be mentioned in this connection that high pressure is being used in organic chemistry for the elucidation of several problems connected with the mechanism of reactions. Thus, high pressure is one of the methods the use of which should promote further development of Butlerov's theory of chemical structure in organic chemistry. Another task of the book is to present certain features of chemical reactions under pressure which cannot at present be understood or theoretically interpreted and so to provide a stimulus for further studies in this direction. (Author)

Ikornikova, N. Yu. and Butuzov, V. P.
HYDROTHERMAL SYNTHESIS OF CALCITE (O Gidrotermal'nom Sinteze Kal'tsita) tr. by Paul M. Gruzensky. 3 Jan 62 [4]p. 1 ref.
Order from OTS or SLA $1.10 62-23274

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v, 111, no. 1, p. 105-106.

DESCRIPTORS: *Calcite, Synthesis, Crystals, Solubility, Temperature

In aqueous solutions of certain chloride salts, under definite pressure and temperature values, calcite, in principle, dissolves congruently. The weaker the basic component of the salt, the more readily the aqueous chloride salt solution hydrolyzes and dissolves calcite. Growth of calcite crystals under temperature gradient conditions is more difficult, the greater the extent of hydrolysis of a given chloride salt. Isometric crystals of calcite 5-6 mm in diameter, as well as needle-shaped crystals up to 1 cm in length, can be obtained from solutions of certain chloride salts by lowering the temperature in an autoclave. (Author)

Ipatiev, W. and Kljukwin, N.
THE PYROGENATION OF NAPHTHALENE UNDER THE JOINT ACTION OF THE OXIDES OF ALUMINUM AND NICKEL. [1962] 5p.
Order from SLA $1.10 63-10686

Trans. of Chem[ische] Berichte (Germany) 1925, v. 58, p. 1-[3].

DESCRIPTORS: *Nickel compounds, *Aluminum compounds, *Oxides, *Naphthalenes, Hydrogenation.

Kiselev, A. V.
ADSORBATE-ADSORBATE INTERACTIONS IN THE ADSORPTION OF VAPOR ON GRAPHITIZED CARBON BLACKS. I. THE EQUATION FOR THE ADSORPTION ISOTHERM WITH ADSORBATE-ADSORBATE INTERACTION. [1962] 17p. 34 refs.
Order from OTS or SLA $1.60 63-10176

Trans. of Koll[oidnyi] Zhurn[al] (USSR) 1958, v. 20, no. 3, p. 338-348.

DESCRIPTORS: *Adsorbants, *Carbon black, *Graphite, Vapors, Adsorption, Chemical reactions, *Thermodynamics, Statistical analysis, Equations.

Various equations are considered for the isotherms of monolayer adsorption from the gaseous phase on a homogeneous surface, taking into account adsorbate-adsorbate interaction. For an approximate description of the convex vapor adsorption isotherms and of those with one or two points of inflexion, in the region of mono- and polymolecular coverage, it is convenient to use the simple equations derived on the basis of the quasi-chemical equilibrium method. These equations contain two equilibrium constants, one for the adsorbate-adsorbent equilibrium (K'_1), and the other for the adsorbate-adsorbate (k_n). For $K_n = 0$ the equations transform to the Langmuir or BET type. The shape of the isotherms and their curvature are determined by the values and ratio of K'_1 and K_n. (Author)

Köster, R.
ALKYL BORON HALIDES AND ALKYL BORATES VIA CATALYTIC EXCHANGE REACTIONS. 3 Mar 61, 3p. 5 refs.
Order from SLA $1.10 63-10681

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 2, p. 66.

DESCRIPTORS: *Alkyl radicals, *Boron compounds, *Halides, *Borates, Catalysis, *Exchange reactions, Hydrides.

Lozovoi, A. V.
THE THERMIC POLYMERIZATION OF ACETYLENE IN THE PRESENCE OF ZINC CHLORIDE. [1962] 21p. 30 refs.
Order from OTS or SLA $2.60 63-10420

Trans. of Zhurnal Obshchei Khimii (USSR) 1931, v. 1, no. 6, p. 717-728.

DESCRIPTORS: *Acetylenes, *Zinc compounds, Chlorides, *Polymerization, Heat treatment, Benzenes, Reaction kinetics, Catalysts, Tests, Chemical analysis, Pyrolysis.

Mardashev, Yu. S. and Agronomov, A. E.
ESTIMATE OF THE SURFACE AREA OF NICKEL IN $NiAl_2O_3$ CATALYSTS. [1963] 5p.
Order from ATS $8.00 ATS-98Q67R

Trans. of #Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1962, v. 36, no. 8, p. 1785-1787.

DESCRIPTORS: *Surface area, *Nickel, Catalysts, Nickel compounds, *Aluminum compounds, *Oxides.

Markov, B. F. and Delimarskii, Yu. K.
ELECTROLYTIC DISSOCIATION OF FUSED SALTS. [1963] 16p.
Order from K-H $16.00 K-H 3737 f

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1953, v. 19, p. 255-265.

DESCRIPTORS: *Electrolysis, *Dissociation, *Fused materials, Salts, Electrochemistry.

Markov, B. F., Delimarskii, Yu. K., and Panchenko I. D.
THERMODYNAMIC PROPERTIES OF LEAD CHLORIDE IN $PbCl_2$-LiCl, $PbCl_2$-NaCl, $PbCl_2$-KCl, AND RbCl MELTS [Termodinamicheskie Svoistva Khloristogo Svintsa v Rasplavakh: $PbCl_2$-LiCl, $PbCl_2$-NaCl, $PbCl_2$-KCl, $PbCl_2$ RbCl]. [1963] 20p.
Order from K-H $20.00 K-H-5114 a

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1954, v. 28, no. 11, p. 1987-1998.
Another trans. is available from SLA as RT-3727.

DESCRIPTORS: *Thermodynamics, *Lead compounds, *Chlorides, Lithium compounds, Sodium compounds, Potassium compounds, Rubidium compounds, Fused materials.

Martin, H. and Gareis, R.
THE KINETICS OF THE REACTION OF CHLORINE DIOXIDE WITH NITROGEN DIOXIDE IN THE SOLUTION PHASE. 10 Nov 60, 12p. 4 refs.
Order from SLA $1.60 63-10575

Trans. of Z[eitschrift für] Elektrochem[ie] (West Germany) 1956, v. 60, p. 959-964.

DESCRIPTORS: *Reaction kinetics, *Chlorine compounds, Dioxides, *Nitrogen compounds, Chemical reactions, Phase studies, Molecular association, Spectrographic analysis, Photochemistry.

Mar'yasin, I. L. and Tesner, P. A.
KINETICS OF GROWTH OF THE CARBON SURFACE DURING THERMAL DECOMPOSITION OF METHANE IN THE TEMPERATURE RANGE OF 1400° TO 1700° C. [1962] 11p. 12 refs.
Order from OTS or SLA $1.60 62-18710

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140, no. 5, p. 1121-1124.
Other translations are available from ICE in v. 2, no. 3, $15.00/year, July 62 [4]p. and from ATS $8.00 as ATS-73P59R [1962] 5p.

DESCRIPTORS: *Methanes, Pyrolysis, Decomposition, Temperature, *Carbon, Surfaces, Growth, Kinetic theory.

Mendzheritskii, E. A., and Bagotskii, V. S.
CONDITIONS FOR EQUILIBRIUM AT A ZINC ELECTRODE IN ALKALINE SOLUTIONS SATURATED WITH ZINCATE. [1962] [5]p. 8 refs.
Order from OTS or SLA $1.10 63-15132

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 128, no. 3, p. 575-577.

DESCRIPTORS: *Chemical equilibrium, Hydroxides, *Zinc electrodes, Electrochemistry, *Zinc compounds, Electric potential.

Panchenkov, G. M. and Golovanov, N. V.
KINETICS OF REGENERATION OF SILICA-ALUMINA CATALYSTS: NATURE OF THE PROCESS OF "COKE" OXIDATION ON SILICA-ALUMINA CATALYSTS [Kinetika Regeneratsii Aliumosilikatnykh Katalizatorov. O Prirode Protsessov Okislenya "Koksa" na Aliumosilikatnykh Katalizatorakh] [1962] 9p.
Order from OTS or SLA $1.10 63-10396

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvest[iya] 1951, no. 10, p. 1513-1521.
Another trans. is available from ATS as RJ-97.

DESCRIPTORS: *Reaction kinetics, *Catalysts, *Alumina-silica catalysts, *Oxidation, Hydrocarbons, Chemical reactions, Chemical properties, Physical properties.

"Coke" burning with air was studied on five synthetic silica-alumina catalysts, different in composition and method of preparation, using a quartz spring balance. The effect of the following variables on the rate of "coke" oxidation was investigated: gas flow rate, temperature, size of coked catalyst granules, and amount of "coke" deposited. It was demonstrated that in the case of oxidation of "coke" on catalysts with the extent of "coke" deposition ρ less than 1.63% by weight, the oxidation reaction at temperatures below 598°C is in the external kinetic region independent of the rate of supply of the regenerating gas. The relative rate of oxidation at temperatures not exceeding 520°C is independent of the degree of "coke" deposition on the catalysts. In the case of "coke" oxidation on catalysts No. 1, 2, 4, and 5, at temperatures below 520°C and "coke" deposition not exceeding 4-6% basis the weight of the catalyst, there exists an internal kinetic mechanism.

The energy of activation in the internal kinetic region in the case of all of these catalysts is the same and is equal to 31,000 cal./mole. At temperatures above 520-530°C and "coke" deposition above 4% oxidation on catalysts Nos. 1, 2, 4, and 5 proceeds in the region of internal diffusion. (Author)

Papee, Denis and Tertian, Robert.
STUDY OF THE THERMAL DECOMPOSITION OF HYDRARGILLITE AND OF THE CONSTITUTION OF THE ACTIVATED ALUMINA. [1962] 28p. 27 refs.
Order from SLA $2.60 63-10453

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1955 [no. 7/8] p. 983-991.
Another trans. is available from ATS as ATS-86H8F, 16p.

DESCRIPTORS: *Minerals, *Aluminum compounds, Oxides, Hydrates, Pyrolysis, Dehydration, *Crystal structure, *Phase transitions, X-ray diffraction analysis.

Peschanski, D.
SELF-DIFFUSION OF S^{--} AND Ag^{+} IONS IN β SILVER SULPHIDE. Pt. 2 of Determination of Self-Diffusion Coefficients by the Isotopic Exchange Method. [1962] [25]p. 22 refs.
Order from SLA $2.60 62-20339

Trans. of J[ournal] de Chimie Physique (France) 1950, v. 47, p. 933-941.

DESCRIPTORS: *Crystals, *Silver compounds, Sulfides, Ions, *Silver, *Sulfur, Diffusion, Electrical conductance *Tracer studies.

The self-diffusion coefficients of S^{--} and Ag^{+} in β silver sulphide have been determined by the isotopic exchange method. Their values at different temperatures are expressed by means of the equations:

$$D_{s^{--}} = 0.237e^{-\frac{24600}{RT}} \quad \text{and} \quad D_{Ag^{+}} = 0.93 \times 10^{-2} e^{-\frac{9100}{RT}} \ cm^2 \ sec^{-1}.$$

The electrolytic conductivities calculated with the aid of these coefficients are compared with the conductivities measured electro-chemically be various authors. (Author)

Prietzschk, A.
THE CRYSTAL STRUCTURE OF THE POLYCARBONATE FROM 4,4'-DIHYDROXYDIPHENYL-2,2-PROPANE. [1962] 16p. 4 refs.
Order from SLA $1.60 62-20369

Trans. of Kolloid-Zeitschrift (West Germany) 1958, v. 156, no. 1, p. 8-14.

DESCRIPTORS: Polymers, *Carbonates, *Phenyl radicals, *Hydroxides, *Propanes, *Crystal structure, X-ray diffraction analysis.

The polycarbonate obtained from 4,4'-dihydroxydiphenyl-2,2-propane is susceptible of crystallization and orientation despite its bulky construction. Owing to the interlocking of the large zigzag chains with their aromatic rings, the crystal structure is very stable. This fact and the considerable stiffness of the molecules may explain the high transformation temperatures. (Author)

Rinck, E.
EQUILIBRIUM IN THE MOLTEN STATE BETWEEN POTASSIUM, SODIUM, AND THEIR CHLORIDES. [Chap. 2 of Equilibria in the Molten State between the Salts and Alkali and Alkali-Earth Metals]. [1962] 6p. 6 refs.
Order from SLA $1.10 63-10582

Trans. of Annales de Chimie (France) 1932 [ser. 10] v. 18, p. 410-418.

DESCRIPTORS: *Chemical equilibrium, *Chlorides, *Potassium compounds, *Sodium compounds, Alloys, Liquids, Vapors, *Phase studies, Quantitative analysis, Fuzed materials.

Ruff, Otto and Staub, Lisbeth.
NITROGEN FLUORIDE AND THE CONDITIONS OF ITS FORMATION. 29 Oct 58, 6p. 8 refs.
Order from SLA $1.10 63-10593

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (Germany) 1931, v. 198, p. 32-38.
Another trans. is available from SLA as #921, 11p.

DESCRIPTORS: *Nitrogen compounds, Fluorides, Synthesis (Chemistry), Electrolytes, Temperature, *Ammonium compounds, *Electrolysis, Amines, Electrochemistry.

In the electrolysis of ammonium fluoride-hydrofluoric acid mixtures, nitrogen fluorides in various ratios are formed, conditional above all on the ammonia concentration and the temperature of the electrolyte. The quantity of NF_3 is always the largest; next to it appear mostly three other gases, which we have tentatively designated as monofluoroamine, difluoroamine, and nitrogen difluoride. The latter is present in the smallest amount and in the most acid medium. (Author)

Schumacher, Hans J. and Sprenger, G.
THE REACTION BETWEEN NITROGEN PENTOXIDE AND OZONE. 8 Feb 61, 20p. (fig. omitted) 23 refs.
Order from SLA $1.60 63-10601

Trans. of Zeitschrift für Physikalische Chemie, [Leipzig] (Germany) 1928, v. 136A, p. 77-92.

DESCRIPTORS: Chemical reactions, *Oxides, *Nitrogen compounds, *Ozone, *Reaction kinetics, Decomposition, Molecular spectroscopy.

It is shown that a bimolecular reaction takes place between N_2O_5 and O_3. The reaction is probably a chain reaction. Its rate can be represented by the equation $\frac{dC}{dt} = 8.7 \cdot 10^{15} e^{-\frac{22000}{RT}} \cdot C_1 \cdot C_2$. It has been shown spectroscopically that with the action of ozone

on nitrogen pentoxide a new nitrogen oxide appears. Various schemes are discussed which would explain the course of the bimolecular reaction with the assumption of a chain proceeding via the higher nitrogen oxide. The formula N_2O_6 or more likely NO_3 is to be ascribed to this nitrogen oxide. (Author)

Shatenshtein, A. I. and Izrailevich, E. A.
COMPARISON OF DEUTERO EXCHANGE AND METALATION OF ALKYL BENZENES. [1962] [9]p. 30 refs.
Order from OTS or SLA $1.10 63-15923

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1958 [v. 32] no. 12, p. 2711-2716.

DESCRIPTORS: *Metalorganic compounds, *Potassium compounds, Amides, *Alkyl radicals, *Benzenes, *Deuterated compounds, Exchange reactions, *Metalation, Reaction kinetics

The rate of deutero exchange between a solution of potassamide (0.02N) in liquid deuteroammonia and the aromatic rings and alkyl groups of the following alkyl benzenes: $C_6H_5CH_3$, iso-$C_6H_5C_3H_7$, tert-$C_6H_5C_4H_9$, and n-$C_6H_5C_4H_9$ has been measured at 25, 10, and 0°C. It has been found that deutero exchange and the metalation of alkyl benzenes by organoalkali compounds (the Shorygin reaction) obey common laws, this being explained by the fact that in both cases the strong base (the amide or the carbanion) protonizes the hydrogen of the hydrocarbon's CH bond, which acts as a weak acid. (Author)

Shigematsu, Hiroshi, Suzuki, Masaji, and Ishii, Yoshiro.
RATE OF SUCCESSIVE ADDITIONS OF PROPYLENE OXIDE TO VARIOUS ALCOHOLS. Pt. 4 of [Studies of the Kinetics on the Ring Opening Addition of Epoxy Compounds to the Active Hydrogen Compound]. [1962] [21]p. 11 refs.
Order from SLA $2.60 62-18748

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64 [no. 9] p. 1585-1588.

DESCRIPTORS: *Propanes, *Epoxides, *Propenes, Oxides, *Alcohols, Chemical reactions, Reaction kinetics, Catalysts, Sodium compounds, Hydroxides

The reaction products of active hydrogen compounds and propylene oxide have several isomers depending on the cleavage position in the oxyran ring. The hydroxyl groups of these isomers may be primary or secondary, and they affect the rate of subsequent reaction. Using an NaOH catalyst, alcohol was reacted with propylene oxide, and the product obtained was fractionated to determine the distribution of the number of molecules added, from which the distribution constant c was calculated with the Weibull distribution equation. It was found that $c < 1$ for primary alcohols and $c > 1$ for secondary alcohols. From infrared absorption spectra, the structure of the product was studied. Then the reaction rate constants for propylene and various alcohols were determined, and the differences caused by the chain length, structure of alcohol and the class of hydroxyl group noted. The equilibrium constants for the formation of complex compounds from various alcohols and propylene oxide with a catalyst were estimated, and the difference due to the cleavage position in the oxyran ring was explained. (See also 61-18630)

Sprenger, Gerhard.
SPECTROGRAPHIC DETERMINATION OF THE NITROGEN OXIDE OCCURRING INTERMEDIATELY IN THE REACTION BETWEEN NITROGEN PENTOXIDE AND OZONE. 17 Jan 62, 10p. 20 refs.
Order from SLA $1.10 63-10546

Trans. of Z[eitschrift für] Elektrochem[ie] (Germany) 1931, v. 37, p. 674-678.

DESCRIPTORS: Spectrographic analysis, *Nitrogen compounds, Oxides, Chemical reactions, *Ozone, *Reaction kinetics, Photochemistry.

Tanaka, T. and Yada, S.
KINETICS OF THE CATALYTIC HYDROGENATION OF 2-ETHYLHEXENE-2-AL-1 IN THE VAPOR PHASE. [1962] [9]p. 2 refs.
Order from SLA $1.10 62-18927

Trans. of Kagaku [Kogaku] (Japan) 1957, v. 21, p. 721-726.

DESCRIPTORS: *Plasticizers, Ethyl radicals, Cyclohexenes, *Aldehydes, Vapors, Hydrogenation, Catalysis, Reaction kinetics, Graphic analysis, Tables.

Reaction rate equations for isobaric gaseous hydrogenation of 2-ethyl-hexene-2-al-1 were obtained. An equation was deduced for obtaining the optimum reaction temperature for each rate of conversion. By effective application, the most economical industrial apparatus can be designed. The results of a sample experiment are shown.

Tanneberger, H.
SOME NOTES UPON THE VAPOR-PRESSURE CURVE OF DIACETYLENE (BUTADIYNE). 22 Jan 36, 3p. 1 ref.
Order from SLA $1.10 63-10464

Trans. of [Chemische] Berichte (Germany) 1933, v. 66, p. 484-[485].

DESCRIPTORS: *Acetylenes, Physical properties, *Vapor pressure.

Topchiev, A. V. and Ballod, A. P.
ADSORPTION OF BORON TRIFLUORIDE ON SIMPLE AND MIXED METAL OXIDES. [1962] 4p. 5 refs.
Order from OTS or SLA $1.10 63-10406

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1953, v. 90, no. 6, p. 1051-1054.
Other translations are available from CCT $10.00 as CCT-199TM, 5p. and from ATS $5.75 as ATS-80K25R 4p.

DESCRIPTORS: *Boron compounds, Fluorides, *Adsorption, *Gels, Metals, *Silicon compounds, Dioxides, *Aluminum compounds, *Chromium compounds, Oxides, *Alumina-silica catalysts, Thermodynamics.

The object of the work was to study the adsorption of boron trifluoride by silica gel, aluminum oxide, a mixed chromia-alumina gel, and a Houdry-type silica-alumina catalyst at 20.0° C. (Author)

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 142 (EARTH SCIENCES SERIES). 22 Apr 63, 27p. JPRS: 18834.
Order from OTS $0.75 63-21639

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Rumania.

DESCRIPTORS: *Abstracts, *Czechoslovakia, *Rumania, Geodesics, Computers, Surveying, Geology, Geography, Hydrology, Economics, Agriculture, Scientific personnel, Photogrammetry, *Geophysics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 159 (EARTH SCIENCES SERIES). 30 Apr 63, 10p. JPRS: 19021.
Order from OTS $0.50 63-21739

Abstract trans. of Geodezia es Kartografia (Hungary) 1963, v. 15, no. 1, p. 1-74.

DESCRIPTORS: *Abstracts, *Hungary, *Geodesics, Mapping, *Geophysics, Triangulation, Gravity, Photogrammetry, Conferences, Satellites (Artificial)

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 167 (EARTH SCIENCES SERIES). 7 May 63, 10p. JPRS: 19098.
Order from OTS $0.50 63-21780

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, *Poland, *Czechoslovakia, *Geodesics, *Geography, Economics, Mapping, *Geophysics, Computers, Altimeters.

Bunz, V. I., Gzovskii, M. V. and others.
METHODS FOR DETAILED STUDY OF SEISMICITY (Metody Detal'nogo Izucheniya Seismichnosti).
28 Feb 63 [551]p. 272 refs. FTD-TT-62-269.
Order from OTS or SLA $26.00 63-19325

Unedited rough draft trans. of Akademiya Nauk SSSR. Institut Fiziki Zemli. Trudy, 1960, no. 9(176) p. 1-327 Another trans. of p. 1-18 (foreward, introduction, chap. 1) is available from OTS or SLA $2.60 as 62-23704, AID-62-23, 13 Feb 62 [22]p. and a summary trans. of p. 75-114 (chap. 4) $1.60 as 62-19113, AID-62-12, 24 Jan 62 [15]p.

DESCRIPTORS: *Scientific research, Scientific organizations, Terrain, *Earthquakes, *Seismological stations, Seismographs, *Seismic waves, Energy, Classification, Attentuation, Nomographs, Frequency, Stresses, *Geology, Stratigraphy, Maps, Asia.

The monograph describes the seismic apparatus used for detailed investigations. It describes new methods for the large-scale determination of the coordinates of earthquake foci worked out on the basis of experience in seismic exploration and detailed methods for determination of the structure of the earth's crust on the basis of earthquake observations by a network of stations. Some results of these determinations are given. Methods are described for determination of seismic energy which allow for the extremely substantial influence of dissipation and absorption of energy, especially important in the epicentral zone. An analysis is given of the dependence of the dominant frequencies of oscillations during earthquakes on the seismic energy of the focus. Frequency selection apparatus is described and some of the results derived by its use are presented. The results of determination of the dynamic parameters of earthquake foci in the Garmskiy region are given with the statistical processing of the data derived. Estimates and computations are given for the parameters of earthquake foci and displacements in foci as functions of earthquake energy.

Zatrutina, R. F. and Rubina, L. S.
INTERNATIONAL GEOPHYSICAL YEAR: BIBLIOGRAPHY OF LITERATURE PUBLISHED IN RUSSIAN IN 1960.
Mar 63 [195]p. NASA Technical Trans. F-109; N63-14012.
Order from OTS $3.00 63-11596

Trans. of mono. Mezhdunarodnyi Geofizicheskii God: Bibliograficheskii Ukazatel' Literatury na Russkom Yazyke za 1960 g., Moscow, 1961 [128p.].

DESCRIPTORS: *Bibliography, *Geophysics, Conferences, Meteorology, Terrestrial magnetism, Electric fields, Aurorae, Airglow, Ionosphere, Meteors, Solar flares, Cosmic rays, Time signals, Glaciers, Oceanology, Rockets, Satellites (Artificial), Upper atmosphere, Orbital trajectories, Mechanics, Tracking, Earthquakes, Gravity, Antarctic regions, Geodesics, Mapping, Geology, Geography, Arctic regions.

This present bibliography contains about 1,200 references to publications issued in 1960. All nongeophysical date are excluded; it contains only material based on observations and experiments carried out as part of the IGY program, including the International Geophysical Cooperation period (1959).

Climatology and Meteorology

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 148 (EARTH SCIENCES SERIES). 25 Apr 63, 5p. JPRS: 18906.
Order from OTS $0.50 63-21678

Abstract trans. of Idojaras (Hungary) 1962, v. 66, no. 6, p. 321-334, 336-377.

DESCRIPTORS: *Abstracts, *Hungary, Weather forecasting, Meteorological parameters, Wind, Atmospheric temperature, *Meteorology, *Geophysics, Inertia, Thermometers.

Borovikov, A. M., Mazin, I. P., and Nevzorov, A. N.
SOME RESULTS OF THE MEASUREMENT OF THE SIZE DISTRIBUTION OF LARGE PARTICLES IN CLOUDS. [1963] 11p.
Order from ATS $11.75 ATS-31Q68R

Trans. of Tsentr[al'naya] Aerolog[icheskaya] Observ-[atoriya]. Tr[udy] (USSR) 1961, no. 36, p. 3-12.

DESCRIPTORS: Measurement, Size, Distribution, *Particles, *Clouds.

Khromov, S. P.
GEOGRAPHICAL DISTRIBUTION OF CLIMATOLOGICAL FRONTS (Geograficheskoe Razmeshchenie Klimatologicheskikh Frontov). Apr 63 [37]p. 26 refs. RTS-2192.
Order from OTS or SLA $3.60 63-19128

Trans. of Vsesoyuznoe Geograficheskoe Obshchestvo. Izvestiya (USSR) 1950 [v. 82] no. 2, p. 126-137.

DESCRIPTORS: *Climatology, *Air mass analysis, Meteorological parameters, Distribution, Earth, *Meteorology, Meteorological charts, Weather forecasting.

Nelepets, V. S. and Stepanenko, V. D.
RADAR METHODS OF METEOROLOGICAL OBSERVATIONS. 11 Apr 63 [226]p. 82 refs. FTD-TT-62-1423.
Order from OTS or SLA $15.00 63-19322

Unedited rough draft trans. of mono. Radiopokatsionnye Metody Meteoropogicheskikh Nabpyudenii, Leningrad, 1961, 175p.

DESCRIPTORS: *Meteorological radar, *Meteorology, *Radar scanning, *Radar equipment, Radar stations, Design, Operation, Detection, Meteorological parameters, Measurement, *Meteorological satellites, *Radio scanning, Wind, Velocity, Position finding, *Atmospheric sounding.

The book deals with the use of radar methods in meteorology, some general problems in radar, the theory of radar sounding of atmospheric formations, and many practical problems in this field. It is designed for workers in the meteorological service, can be used by teachers and students specializing in meteorology, and is also of certain interest to radio specialists who engage in the introduction of radar techniques into the national economy. (Author)

Petrov, V. P. and Sochivko, A. A.
WEATHER SATELLITES AND ROCKETS. 24 Apr 63, 69p. JPRS:18882.
Order from OTS $2.00 63-21665

Trans. of mono. Iskusstvennye Sputniki Zemli i Pogoda (Artificial Earth Satellites and the Weather) Leningrad, 1961, chap. 3 and 4, p. 60-136.

DESCRIPTORS: *Meteorological satellites, *Sounding rockets, Design, *Meteorology, *Upper atmosphere, Exosphere, Solar spectrum, Solar radiation, Magnetic storms, Meteors, Energy, Absorption, Emissivity, Thermal radiation.

Contents:
The upper atmosphere and its investigation with satellites and rockets
Meteorological satellites

Geodesy

ACTIVITIES OF THE MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1892: [EXCERPTS]. [1962] [14]p. ACIC LD-59.
Order from OTS or SLA $1.60 63-13613

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1892, p. 63, 72-79, 86-87, 90 (pub. 1894)

DESCRIPTORS: *Hydrographic surveying, *Triangulation, Geodesics, Astronomical geodesics.

ACTIVITIES OF THE MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1902: [EXCERPTS]. [1962] [27]p. ACIC LD-51.
Order from OTS or SLA $2.60 63-13615

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1902, p. 54-55, 64-65, 77-79, 82-87, 113, 119-121, 128-131, 139-142 (pub. 1903).

DESCRIPTORS: *Hydrographic surveying, Triangulation, Geodesics, Astronomical geodesics.

HYDROGRAPHIC WORK IN WHITE, BLACK AND AZOV SEAS AND IN THE ARCTIC OCEAN IN 1894: [EXCERPTS]. [1962] [15]p. ACIC LD-49.
Order from OTS or SLA $1.60 63-13611

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1894, p. 43-46, 54-56, 89-90, 107-109 (pub. 1895).

DESCRIPTORS: *Hydrographic surveying, *Triangulation, *White Sea, Geodesics, Astronomical geodesics, Arctic regions, Black Sea.

HYDROGRAPHIC WORK IN THE WHITE, BLACK AND AZOV SEAS INCLUDING HYDROGRAPHIC WORK PERFORMED BY PORTS AND VESSELS IN 1896: [EXCERPTS]. [1962] [14]p. ACIC LD-49.
Order from OTS or SLA $1.60 63-13609

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1896, p. 58-62, 79-83, 101 (pub. 1897).

DESCRIPTORS: *Hydrographic surveying, Oceanology, *Black Sea, *White Sea, Oceanographic vessels, *Triangulation, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1899: [EXCERPTS]. [1962] [15]p. ACIC LD-50.
Order from OTS or SLA $1.60 63-13573

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1899, p. 56-58, 77-81, 117-120 (pub. 1900).

DESCRIPTORS: *Hydrographic surveying, *Triangulation, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1900: [EXCERPTS]. [1962] [18]p. ACIC LD-50.
Order from OTS or SLA $1.60 63-13572

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1900, p. 50-52, 64-68, 80-84, 98-99 (pub. 1901).

DESCRIPTORS: *Hydrographic surveying, Triangulation, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1901: [EXCERPTS]. [1962] [17]p. ACIC LD-50.
Order from OTS or SLA $1.60 63-13571

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1901, p. 49, 51-52, 60-67, 96, 109-110 (pub. 1902).

DESCRIPTORS: *Hydrographic surveying, *Triangulation, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1909: [EXCERPTS]. [1962] [14]p. ACIC LD-50.
Order from OTS or SLA $1.60 63-13570

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1909, p. 71-78, 84-85, 90-92, 98 (pub. 1910).

DESCRIPTORS: *Hydrographic surveying, *Triangulation, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT 1910: [EXCERPTS]. [1962] [17]p. ACIC LD-50.
Order from OTS or SLA $1.60 63-13569

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1910, p. 72-76, 78, 82-83, 87-88, 92-93, 98-102, 107 (pub. 1911)

DESCRIPTORS: *Hydrographic surveying, *Triangulation, Black Sea, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1911: [EXCERPTS]. [1962] [10]p. ACIC LD-50.
Order from OTS or SLA $1.10 63-13568

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1911, p. 67-68, 89-96 (pub. 1912).

DESCRIPTORS: *Hydrographic surveying, *Triangulation, *Black Sea, Geodesics, Astronomical geodesics.

MAIN HYDROGRAPHIC ADMINISTRATION OF THE NAVAL MINISTRY [OF THE USSR]. REPORT, 1912: [EXCERPTS]. [1962] [24]p. ACIC LD-50.
Order from OTS or SLA $2.60 63-13567

Trans. of Glavnoe Gidrograficheskoe Upravlenie. Otchet (USSR) 1912, p. 58-60, 62-64, 68-71, 75-78, 83-87, 95, 101-102.

DESCRIPTORS: *Hydrographic surveying, *Triangulation, *Black Sea, Geodesics, Astronomical geodesics.

Bertrand, G.
PRINCIPLE OF A METHOD FOR RAPID MEASUREMENT OF THE RELATIVE VALUE OF g. [1963] 2p.
Order from ATS $3.50 ATS-40Q68F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1938, v. 207, p. 356-357 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Gravity, Measurement.

Gorshkov, P.
GRAVIMETRIC SURVEY OF THE USSR FROM HER WESTERN BORDER TO VLADIVOSTOK: MODERN PROBLEMS ASSOCIATED WITH GRAVIMETRIC DETERMINATIONS. [1961] [42]p. ACIC RR-47.
Order from OTS or SLA $4.60 61-28844

Trans. of Gosudarstvennoe Geograficheskoe Obshchestvo Izvestiya (USSR) 1931, v. 63, no. 5/6, p. 379-401.

DESCRIPTORS: *Gravity, *Gravity anomalies, *Gravimeters, Distribution, Geodesics, Ellipsoids, Measurement, Hydrographic surveying, Submarines.

Geology

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 7, P. 757-884. July 62, 1v. 157 refs.
Order from AGI $5.00, $55.00/year

Trans. of ##Sovetskaya Geologiya (USSR) 1961, no. 12, p. 55-57; Vsesoyuznyi Geologicheskii Institut. Informatsionnyi Sbornik (USSR) 1956, v. 3, p. 103-107; Mineralogicheskii Sbornik (USSR) 1960, v. 14, p. 34-79, 481-482; and mono. Association for the Geological Collaboration in Japan, Monograph no. 10 [sic] n.p., 1960, 40p.
##Also available from OTS or SLA $5.60 as 62-24024, JPRS-13516, 20 Apr 62 [58]p.

DESCRIPTORS: *Geology, Periodicals, *Stratigraphy, *Well drilling, *Geophysical prospecting, Tin, Deposits, *Spectrographic analysis, *Minerals, *Crystallization, *Petrology, *Paleoecology, Mammals.

Contents:
##Deep structure of earth and problems of super-deep drilling, by N. A. Belyaevskii and V. V. Fedynskii
Comparison of heavy-mineral analysis and spectrographic methods in the search for buried tin deposits, by K. B. Ilin
Mineral paragenesis of the system M_gO-SiO_2-H_2O-CO_2 and the water-carbon dioxide regimen in metamorphism, by D. S. Korzhinskii
Pheumatolytic crystallization of minerals, by N. A. Eliseev
Tectonic movement and rock structure of the Sambagawa metamorphic zone, Japan, by I. Nakayama.
Tertiary terrestrial mammalian localities in the territory of the USSR: book review by F. C. Whitmore, Jr. of mono. by A. A. Borisyak and E. I. Belyaeva.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 8, P. 845-970. Aug 62, 1v. 128 refs.
Order from AGI $5.00, $55.00/year

Trans. of [Akademiya Nauk SSSR]. Paleontologicheskii Institut. Trudy, 1948, v. 15, no. 8, p. 5-37; [Kazan] (Japan) 1960, ser. 2, v. 5, no. 1, p. 25-34; Nauchno-Issledovatel'skii Institut Geologii Arktiki. Trudy (USSR) 1959 [v. 98] p. 5-35; Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1959, v. 2, p. 136-146; Akademiya Nauk Armyanskoi SSR [Erevan]. Izvestiya. [Geologicheskie i Geograficheskie Nauki] 1961, v. 14, no. 4, p. 37-43; Mineralogicheskii Sbornik (USSR) 1960, v. 14, p. 86-104; and mono. Trudy Devyatoi Sessii Komissii po Opredeleniyu Absolyutnogo Vozrasta Geologicheskikh Formatsiy, Moscow/Leningrad, 1961, p. 146-164.

DESCRIPTORS: *Geology, Periodicals, Paleoecology, Mammals, *Basalt, Volcanic dust, Obsidian, *Geochemistry, *Sedimentation, Classification, *Ores, Deposits, Geological time, *Gold, Copper, Molybdenum, *Quartz.

Contents:
A survey of fossil sites of tertiary land mammals in the USSR, by A. A. Borisyak
Path of fractional differentiation of basaltic magmas and fractionization diagram, by Y. Shimazu
Density of pumice, with reference to the mechanism of formation of welded tuffs, by K. Yagi and others
An experiment in utilization of geochemical data in correlation and facies analysis of permian sediments in the Khatanga depression, by I. S. Gramberg and N. S. spiro
Classification of postmagmatic ore fields, by A. V. Korolev and P. A. Shekhtman
Absolute age of formation and relative age of intrusion of the Kimberlites of Yakutia, by V. I. Mikheenko and N. I. Nenashev
Character of gold mineralization in a copper-molybdenum deposit, by A. I. Karapetyan
Origin of crystalline quartz veins, by E. M. Laz'ko
Structures and textures of ores; book review by E. A. Alexandrov of a mono. ed. by A. G. Betekhtin.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 9, P. 971-1096. Sep 62, 1v.
Order from AGI $5.00, $55.00/year

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geologiya i Razvedka (USSR) 1958 [v. 1] no. 4, p. 121-132; 1961, [v. 4] no. 8, p. 3-10; Chishitsugaku Zasshi (Japan) 1959, v. 65, no. 765, p. 343-348; no. 770, p. 688-700; Sovetskaya Geologiya (USSR) 1961, no. 3, p. 56-68, 79-96, 113-126, 132-143; Geologiya i Geofizika (USSR) 1961, no. 10, p. 129-130.

DESCRIPTORS: *Geology, Periodicals, *Geophysical prospecting, Model tests, *Sedimentary rock, Classification, *Stratigraphy, *Petrology, *Paleoecology, Iron, *Scientific organizations, *Hydrocarbons, *Igneous rock, *Metamorphic rock, *Scientific personnel, *Conferences.

Contents:
Model studies in some problems of high-frequency electrical prospecting, by D. A. Daev
Basic principles of sedimentary rock classification, by M. S. Shvetsov
Gotlandian stratigraphy of the outer zone of Southwest Japan, by T. Hamada
On the phenocrystic pigeonite in an andesite from Moniwa, Sendai City, by K. Oide
Soviet Geologiya, 1961, no. 3: contents, critique, selected publication, availability of translations
Boundaries between divisions of the permian in Southern Europe and Southern Asia, by B. K. Likharev
The Rhaetian of Northeast Asia, by Yu. N. Popov
Zone of major platform faults in southern areas of the USSR, by N. Yu. Uspenskaya
Lower cambrian iron quartzites of Tuva, by S. V. Potapov
General Assembly (no. 12) of the International Union of Geodesy and Geophysics, by V. V. Beloussev
First extended plenum of the Interdepartmental Commission on Geomorphology, Division of Geologic and Geographic Sciences, Acad. of Sciences of the USSR, by G. S. Ganeshin and Yu. F. Chemekov
Oil, gas and bitumen in igneous and metamorphic rocks: book review by G. I. Teodorovich of mono. by N. A. Kudryavtsev
On the 91st birthday of Nikolai Nikolaevich Yakovlev, by M. V. Kulikov
Notes on international scientific meetings.

Ali-Zade, A. A., Akhmedov, G. A. and others.
PROBLEMS OF DRILLING A SUPERDEEP WELL FOR THE STUDY OF THE STRUCTURE OF THE EARTH'S CRUST IN AZERBAIDZHAN. 17 May 63, 24p. 31 refs. JPRS: 19264.
Order from OTS $0.50 63-21850

Trans. of Sovetskaya Geologiya (USSR) 1963, no. 2, p. 3-16.

DESCRIPTORS: *Well drilling, *Stratigraphy, Geology, Geological survey, Gravity anomalies

Bykova, E. V.
FORAMINIFERA OF THE CARADOCIAN STAGE OF EASTERN KAZAKHSTAN: EXCERPTS. [1963] 32p.
Order from ATS $46.50 ATS-89Q66R

Trans. of mono. Foraminifery Karadoka Vostochnogo Kazakhstana, Alma-Ata, 1961, p. 3-20, 23-24, 30-33, 58, 62-69.

DESCRIPTORS: *Paleoecology, *Foraminifera.

Carrette, G.
GRADIOMETRIC LOGGING. [1963] 8p.
Order from ATS $12.50 ATS-41Q68F

Trans. of French patent 1,303,577, filed 31 July 61, granted by decree of 6 Aug 62.

DESCRIPTORS: *Magnetometers, *Geological survey, *Well logging.

Deleau, P. and Marie, P.
THE FUSULINIDS OF THE WESTPHALIAN C OF THE ABADLA BASIN AND SOME OTHER FORAMINIFERA OF THE ALGERIAN CARBONIFEROUS (COLOMB-BECHAR REGION): EXCERPTS. [1963] 29p.
Order from ATS $36.75 ATS-86Q67F

Partial trans. of mono. Fusulinides, n. p., n. d., p. 48-72, 134-145.

DESCRIPTORS: *Protozoa, *Foraminifera, *Paleoecology.

Fotiadi, E. E.
GEOPHYSICAL RESEARCH IN SIBERIA AND THE FAR EAST. 17 May 63, 7p. JPRS: 19263.
Order from OTS $0.50 63-21849

Trans. of Akademiya Nauk SSSR. Vestnik, 1963, v. 33, no. 1, p. 16-20.

DESCRIPTORS: *Geophysical prospecting, *Siberia, Geology, Geophysics

Kedo, G. I.
EXPERIMENTS IN THE APPLICATION OF PERHYDROL FOR THE MACERATION OF SPORES AND POLLEN FROM ROCKS OF PALEOZOIC AGE. 20 Apr 60, 4p.
Order from OTS or SLA $1.10 62-20431

Trans. of Akademiya Navuk BSSR [Minsk]. Doklady, 1958, v. 2, no. 1, p. 37-39.

DESCRIPTORS: *Hydrogen peroxide, Separation, *Spores, *Pollen, *Rock (Geology), Geology, Paleoecology, Analysis, Oxidizers, Bleaching agents.

Levshunov, P. A.
DISTRIBUTION OF HEAVY HYDROCARBONS IN DENSE (ARGILLACEOUS) ROCKS. [1963] 5p.
Order from ATS $7.00 ATS-82Q67R

Trans. of Geol[ogiya i] Geofiz[ika] (USSR) 1962, no. 9, p. 122-124.

DESCRIPTORS: Distribution, *Hydrocarbons, *Rock (Geology), Clays.

Malofeev, G. E.
HEAT LOSSES TO OVERLYING AND UNDERLYING ROCK WHEN HOT WATER IS INJECTED INTO A LAYER (Poteri Tepla v Krovlyu i Podoshvu pri Zakachke v Plast Goryachei Vody). [1962] [20]p. (foreign text included) 4 refs.
Order from OTS or SLA $1.60 63-10211

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Neft' i Gaz (USSR) 1959, v. 2, no. 5, p. 37-43.

DESCRIPTORS: Thermal diffusion, Thermal utilization, Oils, Rock(Geology), *Heat transfer, Numerical analysis, *Water injection, *Petroleum, Sources.

An experimental relationship between the coefficient of effective utilization of heat η_{heat} and the parameter F_0 for plans-linear filtration was found. This coefficient decreases with time. The greater the thickness of the layer and the greater the rate of filtration, the greater the thermal effect from injection of the hot liquid. Lauverier's formula may be used to make approximate calculations of the heating of a layer when a hot liquid is injected. (Author)

Skornyakov, P. I. and Tupitsyn, N. V.
A GEOMORPHIC SKETCH OF THE OKHOTSK-KOLYMA AREA, PT. I [SELECTED PARTS] (Geomorfologicheskii Ocherk Okhotsko-Kolymskogo Kraya) tr. by Lawrence Ecker. 18 Feb 45 [65]p. (figs. omitted).
Order from OTS or SLA $6.60 62-25061

Partial trans. of Materialy po Izucheniyu Okhotsko-Kolymskogo Kraya. Seriya I: [Geologiya i Geomorfologiya] (USSR) 1936, no. 10.

DESCRIPTORS: *Terrain, Maps, Mountains, *Hydrology, *Communication systems, *Erosion, *Permafrost, *Glaciers, Deposits, Minerals, Geography, Geology, Transportation.

Snarskii, A. N.
PRIMARY MIGRATION OF OIL. [1963] 4p.
Order from ATS $8.00 ATS-50Q68R

Trans. of Geol[ogiya] Nefti i Gaza (USSR) 1962, v. 6, no. 11, p. 52-54.

DESCRIPTORS: *Oils, Distribution.

Mineralogy

Pavlovskii, V. I.
PROCESSING THE RESULTS OF DETERMINING THE PHYSICAL PROPERTIES OF ROCKS. [1963] 5p.
Order from ATS $6.25 ATS-61Q67R

Trans. of Razvedka i Okhrana Nedr (USSR) 1962, v. 28, no. 10, p. 57-60.

DESCRIPTORS: *Rock (Geology), Physical properties.

Strese, H. and Hofmann, U.
SYNTHESIS OF MAGNESIUM SILICATE GELS WITH TWO DIMENSIONAL REGULAR STRUCTURES. [1962] [42]p. 57 refs.
Order from SLA $4.60 63-10437

Trans. of Zeitschrift für Anorganische Chemie (Germany) 1941, v. 247, p. 65-95.

DESCRIPTORS: Synthesis, *Magnesium compounds, *Silicates, *Gels, *Crystal structure, Chlorides, Montmorillonite, *Mica, Heat treatment, Hydroxides.

Oceanography

TECHNICAL DATA AND DESCRIPTION OF THE RUSSIAN EXPEDITION SHIPS PARTICIPATING IN THE INTERNATIONAL GEOPHYSICAL YEAR PROGRAM: A. OTKUPSHCHIKOV, TOPSEDA. tr. by M. Slessers. 1962 [4]p. HO Trans-136 (a).
Order from OTS or SLA $1.10 62-24753

Trans. of unidentified mono. pub. by USSR World Data Center Institute of Aeroclimatology, n.p., n.d., 2p.

DESCRIPTORS: *Oceanographic vessels, *Ships (Non-military), Ship structural components, Oceanographic equipment.

Ganson, P. P., Udintsev, G. B. and others.
MAXIMUM DEPTHS OF THE PACIFIC OCEAN [AND] DISCOVERY OF A DEEP-SEA TROUGH IN THE WESTERN PART OF THE PACIFIC OCEAN, tr. by Olga Jones. [1962] [19]p. 4 refs. [DSIR] NLL M. 3560.
Order from OTS or SLA $1.60 62-24699

Trans. of Priroda (USSR) 1958 [v. 47, no. 7] p. 85-88 and 1959 [v. 48] no. 6 [p. 84-87].

DESCRIPTORS: *Pacific Ocean, *Ocean bottom topography, *Depth finding, Oceanographic data maps.

Podina, V.
THE AGIGEA STATION FOR MARINE ZOOLOGY. 30 Apr 63, 5p. JPRS: 18983.
Order from OTS $0.50 63-21721

Trans. of Stiinta si Tehnica (Rumania) 1963, v. 15, no. 3, p. 10-11.

DESCRIPTORS: *Marine biology, Animals, Scientific organizations, *Fishes, Scientific research, Black Sea, Sea water, Salinity, *Biological laboratories.

Voznesenskii, P. I.
ORGANIZATION OF ICEBREAKER SERVICE IN THE BLACK AND AZOV SEAS (Organizatsiya Ledokol'nogo dela v Chernom i Azovskom Moryakh) tr. by M. Slessers. 1962 [27]p. HO Trans. 170.
Order from OTS or SLA $2.60 63-15136

Trans. of mono. Ledokol'noe Delo (Icebreaker Service) (Trudy Nauchno-Tekhnicheskogo Komiteta Narodnogo Komissariata Putei Soobshcheniya no. 5) n.p., 1925, chap. 2, p. 27-51.

DESCRIPTORS: *Icebreakers, *Black Sea, Naval vessels (Support), Ice, Harbors, Ice charts, Oceanographic data.

The paper summarizes the dates of freezeups and breakups of ice, including the duration of ice period in various ports of the Black and Azov Seas, such as Odessa, Nikolayev, Kherson, Skadovsk, Mariupole (Zhdanov), Taganrog and Rostov-na-Donu Ports. The information is based on observation records from 1875 to 1913. Also, data on icebreakers aiding navigation in the ports are given. They include the names of icebreakers, their length, beam, draft and engine capacity in horsepowers, as well as the maintenance expenses and its effect on transportation cost and freight turnover.

Physics of the Atmosphere

SOVIET ATMOSPHERIC OBSERVATIONS DURING INTERNATIONAL GEOPHYSICAL YEAR. 20 May 63, 62p. 33 refs. JPRS: 19275.
Order from OTS $1.75 63-21857

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1962, no. 134, p. 38-74 and 102-112.

DESCRIPTORS: Geophysics, *Tropopause, *Atmospheric motion, *Stratosphere, *Ozone, Atmospheric temperature, Barometric pressure, Radiosondes, Periodic variations, *Atmosphere.

Contents:
Tropopause waves in upper latitudes during IGY, by M. P. Churinova
Certain characteristics of interlatitude exchange in lower stratosphere based on observations of atmospheric ozone, by G. P. Gushchin and R. G. Romanova.

Lyakhova, L. N.
LATITUDE-VARIATION OF THE STABILITY OF THE F_2 LAYER CRITICAL FREQUENCIES AT TIMES OF DISTURBANCE, tr. by E. R. Hope. Mar 63 [4]p. 4 refs. DSIS T 381 R.
Order from NRCC NRCC C-4341

Trans. of [Akademiya Nauk SSSR]. I[nstitut] Z[emnogo] M[agnetizma] I[onosfery i] Ra[sprostraneniya Radiovoln]. Trudy, 1961, no. 19(29) p. 48-51.

DESCRIPTORS: Ionosphere, *Ionospheric disturbances, Stability, *Statistical functions, Correlation techniques.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 141 (ELECTRONICS, ENGINEERING AND SPACE RESEARCH SERIES). 22 Apr 63, 6p. JPRS: 18833.
Order from OTS $0.50 63-21638

Abstract trans. of Automatizace (Czechoslovakia) 1963, v. 6, no. 2, p. 29-55 and appendix p. 5-8.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight, *Automation, *Computers, *Electronic equipment, Semiconductor devices, Servomechanisms, Printing, Magnetic amplifiers, Pumps, Analog systems, Manometers.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 147 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 25 Apr 63, 18p. JPRS: 18905.
Order from OTS $0.50 63-21677

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and East Germany.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight, *Electronic equipment, Design, Measuring devices (Electrical and electronic), *Computers, Control systems, Computer logic, Automation, *Communication equipment.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 155 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 30 Apr 63, 3p. JPRS: 19012.
Order from OTS $0.50 63-21731

Abstract trans. of Telekomunikacije (Yugoslavia) 1963, v. 12, no. 1, p. 1-36.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight, *Communication systems, *Telephone communication systems, Communication satellites (Active), Intermediate frequency amplifiers, Electric cables, Digital computers.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 161 (ELECTRONICS ENGINEERING AND SPACE RESEARCH SERIES). 7 May 63, 4p. JPRS: 19092.
Order from OTS $0.50 63-21774

Abstract trans. of [Polska Akademia Nauk]. Bulletin: Serie des sciences Techniques, 1963, v. 11, no. 1, p. 1-15, 17-25, 27-31, 33-39, 41-50, 53-59.

DESCRIPTORS: *Abstracts, Bibliographies, *Electronics, *Engineering, Space flight, *Mechanics, *Continuous media, Structures, *Electronic equipment, *Ferromagnetism, Special functions, *Nonlinear systems, *Water waves, Navigation.

AUTOMATION, 1962 [VOL. 7] NO. 2. 14 Feb 63 [115]p. 83 refs. FTD-TT-62-1521. AD-400 531
Order from OTS or SLA $9.60 63-19171

Unedited rough draft trans. of Avtomatyka (USSR) 1962 [v. 7] no. 2, p. 1-[illegible].
##Other translations of p. 63-67, 69-72 are available from OTS or SLA $1.10 as 63-15241 [DSIR] NLL M. 8984 [1962] [8]p. and as 63-15235 [DSIR] NLL M. 8983 [1962] [4]p.

DESCRIPTORS: *Automation, Control systems, Differential equations, *Hydraulic systems, Monitors, Complex variables, *Cathode ray tubes, Generators, Statics, Dynamics, *Irrigation systems, Control, *Drives, Electric motors, *Semiconductor devices, *Magnetic amplifiers, Differentials, *Rolling mills, Velocity, *Telemetering data, Coding, *Nonlinear systems, Oscillation, *Voltage regulators, *Underground structures, Pipelines, *Corrosion, *Ships (Nonmilitary), *Speed regulators, *Arc welding, Welding rods.

Contents:
On the invariance of pulsed automatic control systems, by L. Z. Grishchenko and D. F. Boldyreva
Stable and dynamic conditions of operation of an external system for controlling a hydromonitor, pt. 2, by B. Yu. Mandrovskii-Sokolov
On the theory of functional generators with cathode ray tubes, by O. I. Petrenko
Supporting structures of irrigation channels as objects of control, by Ya. T. Dub
Static characteristics of AC throttle drives, by Yu. M. Rozov
Tri-phase reversive drive with magnetic semiconductor amplifier, by N. V. Khrushchova
##Electronic differential system for automatically measuring the rate of rolling, by P. I. Dekhtyarenko and others
##Code frequency-combination system for telemetering, by B. S. Didyk and F. O. Katkov
Symmetrical mono-frequency forced oscillations in nonlinear automatic control systems, by V. V. Pavlov
Automatic potential (voltage) regulator to protect underground installations against corrosion, by I. K. Parra and N. V. Petina
Optimum speed regulator of river boats, by O. F. Chernish
Using negative static characteristics of a source-arc system for welding with nonconsumable electrode, by E. M. Esibyan
Oleksiy Grigorovich Ivakhnenko (on the 50-th birthday).

[LEVER MECHANISMS (ALTIMETERS)]. [1962] [10]p. (foreign text included).
Order from SLA $1.10 62-18734

Partial trans. (p. 83-85) of German language article from unidentified source, n.d.

DESCRIPTORS: *Flight instruments, *Altimeters, Design.

Lander, Gerhard.
EXPANSION AND DEFINITION OF THE ANALOGIES BETWEEN ELECTRICAL AND MECHANICAL CIRCUITS (CONCLUSION). 14 Nov 53, 15p. (figs. formulae omitted) 32 refs.
Order from SLA $1.60 62-18357

Trans. of Frequenz (Germany) 1952 [v. 6, no. 9] p. 257-266.

DESCRIPTORS: Analysis, *Electronic circuits, *Transmission lines, Gyroscopes, Electric currents, Electric potential, Integral transforms, Deflection, Electromechanical converters, Drafting, *Circuits.

Paulus, Franz.
RAIL ANCHOR FOR PREVENTION OF CREEPAGE, tr. by J. R. -P. 15 Oct 62, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-13012

Trans. of Swiss patent 178,151, cl. 6a, appl. filed 16 Apr 34, pat. registered 15 July 35, pub. 16 Sep 35 (priority claimed in Germany from 26 Apr 33). Another trans. is available from OTS or SLA $1.10 as 61-15060, 28 Nov 60, 4p.

DESCRIPTORS: *Railroad tracks, Creep, Countermeasures, *Anchors (Structural), Design.

The invention concerns a one-piece anti-creep anchor that grips the rail flange on one side with a double jaw and is applied against the other side by means of a nose. It is the object of the invention to develop a rail anchor of this type that is so constructed that it cannot be shifted on the rail by creepage forces, and that can be manufactured from rolled shapes. The invention satisfies these requirements by such a shaping of the rail anchor that the two jaws are rigidly interconnected and arranged in such a way that the nose, in at least a part of its width, is on a line with the jaw that is applied to the tie. (Author)

Shatalov, A. S.
STRUCTURAL METHODS IN THE THEORY OF CONTROL AND ELECTRIC AUTOMATION. 7 May 63, 1232p. JPRS: 19084.
Order from OTS $13.50 63-21759

Trans. of mono. Strukturnye Metody v Teorii Upravleniya i Elektroavtomatike, Moscow, 1962, 408p.

DESCRIPTORS: *Automation, *Control systems, Theory, *Linear systems, Differential equations, Models (Simulations), Circuits, Determinants, Integral equations, Operators (Mathematics), *Integral transforms, Frequency analyzers, *Electric furnaces, *Generators, *Electric motors, *Power amplifiers, *Feedback amplifiers, *Magnetic amplifiers, *Transformers, *Accelerometers, *Gyroscopes, *Computers, Stability, *Nonlinear systems, Amplitude modulation, Graphic analysis, Nomograms, Tables

This book elucidates the problems, essential in practice, of the theory of automatic control and electric automation from the aspect of structural investigation methods. Analyzed is the effect of inner components which characterize the structure of elements and the complex control systems, as well as additional connections employed to obtain stability, precision, and other indices of system. A mathematical device is described needed in the use of structural methods, based on the Laplace and Fourier conversions, and designed for use in control systems with alternating as well as constant parameters. The majority of these problems are oriented toward solutions by modulation methods. The complex dynamic processes in electric furnaces, electric machines, electric automatic parts, and synthetized complex control systems are described in a manner understandable to engineers. The book contains a number of nomograms and calculation tables which facilitate the solution of the problems of analysis and synthesis, mainly on the basis of frequency methods. (Foreward)

Chemical Engineering

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 64. 22 Apr 63, 41p. JPRS: 18810.
Order from OTS $1.25 63-21623

Trans. of Partiinaya Zhizn' (USSR) 1962, no. 11, p. 34-36; Zhivotnovodstvo (USSR) 1963 [v. 25] no. 1, p. 17-19; Spirtovaya Promyshlennost' (USSR) 1963, no. 1, p. 27-28; Steklo i Keramika (USSR) 1963 [v. 20] no. 1, p. 43-44 and 5 selected articles from 3 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Construction, Diamonds, Synthetic stones, Cordage, Rubber, Asbestos, Animal industry, Alcohols, Glass, *Industrial plants.

Contents:
Crash program for construction projects of large-scale chemical industry, by D. Shishkarev and others
Progress in the chemical industry of Tambovskii sovnarkhoz, by P. Zabavnikov
Production of synthetic diamonds in the Ukraine, by V. Bakul'
Lagging production of high-strength cord at the Kamensk-Shakhtinskii combine, by V. Lobachev and others
Lagging construction of the Barnaul rubber-asbestos combine, by N. Shipulin and others
Unlimited production possibilities of the enterprises in Kokhtla-Yarve, by S. Popov
Technical progress is the vanguard of the Seven-year Plan
Chemical industry and chemization of animal husbendry by G. I. Vilesov
Production innovators at alcohol plants, by A. P. Babenko and N. P. Korotenko
To expand the production of new glass wares.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 65. 23 Apr 63, 44p. JPRS: 18851.
Order from OTS $1.25 63-21648

Trans. from Komsomol'skaya Pravda (USSR) 1963, 3 Feb; Pravda, Moscow (USSR) 1963, 1 Feb; Kommunist, Erevan (USSR) 1963, 2 Feb; Trud, Moscow (USSR) 1963, 3 Feb; Izvestiya (USSR) 1963, 2 Feb; Pravda Ukrainy (USSR) 1963, 2 Feb, p. 2; Sovetskaya Latviya (Latvian USSR) 1963, 3 Feb; Ekonomicheskaya Gazeta (USSR) 1963, No. 5[78] p. 17, 40; no. 6[79] p.3-4.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Plastics industry, Industrial equipment, Purification, Hydrochloric acid, Fibers (Synthetic), Construction, Wastes (Industrial), Insecticides, Glass textiles, Synthetic rubber, *Industrial plants.

Contents:
Mismanagement at the Rostov branch of the State Institute for the Design and Planning of Plastics Industry, by V. Batalov
Develop more high-productivity equipment for chemistry, by L. Kostandov
Purify hydrochloric acid at the Erevan Plant imeni Kirov, by Ya. Mikhailovskii
Expedite the completion of the Daugavpils Synthetic Fiber Plant, by V. Lasman and others
Expedite the construction of chemical plants in Western Kazakhstan and utilize liquid wastes at the Zaporozh'e Coke Chemical Plant: More nitron will be produced, by P. Kuleshov
Expedite the expansion of the Lisichansk Chemical Combine, by B. Popov and G. Zhernovoi
Improve the construction of the Valmiera Fiberglass Plant, by A. Berg and others
Chemistry and agriculture
For a careful consumption of rubber accessories, by I. Ushakov
Expanding output at the Voronezh synthetic rubber and tire plants, by P. Kazakov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 66. 25 Apr 63, 42p.
JPRS: 18910.
Order from OTS $1.25 63-21682

Trans. of Promyshlennost' Armenii (USSR) 1962 [v. 5] no. 12, p. 18-20; Sovetskie Profsoyuzy (USSR) 1963, no. 1, p. 5-6; and from Stroitel'naya Gazeta (USSR) 1963, 30 Jan, p. (?) and p. 2; Ekonomicheskaya Gazeta (USSR) 1963, no. 3(76) 19 Jan, p. 4-8; Pravda, Moscow (USSR) 1963, 21 Jan; Bakinskii Rabochii (USSR) 1963, 19 Jan.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Fibers (Synthetic), Rubber, Tires, Production, Machines, Polymers, Electric insulation, Plastics, Economics, *Industrial plants, Plastics industry.

Contents:
Kirovakan artificial fiber plant on stream, by L. Erzinkyan
For more rapid startup of new capacities of the chemical industry
Poor production leadership at the Baku tire plant, by A. Lerner and P. Savin
Improved tires at Yaroslavl' tire plant, by V. Nesterchuk
Installation operations at the Salavat petrochemical combine, by V. Malygin
Close contact of all organizations to speed up the construction of chemical complexes in Novokuybyshevsk, by I. Skachkov and others
Chemistry and machine building, by A. Kogan
Public opinion on the use of polymer materials
Lagging production of electrical insulating polymer materials, by Yu. Koritskii
Lagging production of plastics, by Ts. Gitel'son
Demand, production, and cost of plastics, by N. Kosinets
Study of new materials, by V. Baranovskii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 67. 29 Apr 63, 31p.
JPRS: 18947.
Order from OTS $1.00 63-21701

Trans. from Sovetskaya Latviya (Latvian USSR) 1963, 17 Feb; Pravda, Leningrad (USSR) 1963, 17 Feb; Pravda Ukrainy (USSR) 1963, 20 Feb; Trud, Moscow (USSR) 1963, 19 Feb; 20 Feb; Rabochaya Gazeta (USSR) 1963, 20 Feb; 22 Feb; Zarya Vostoka (USSR) 1963, 17 Feb; 20 Feb.

DESCRIPTORS: *Industrial production, *Chemical industry, Chemical engineering, *Industrial plants, Construction, Operation, Fertilizers, Phosphates, *Synthetic fibers, *Lactams.

Contents:
Growth of the chemical industry in Soviet Latvia
Large number of new chemical plant projects
Successful operation of the Berdichev Progress Chemical Construction Plant, by M. Akimenko
Difficulties encountered at Sumgait Superphosphate Plant: Lessons for trade-union plant committees, by M. Pleskachevskii
Construction difficulties and lagging on the Sumgait construction projects, by M. Alekperov and others
Technological improvements and training surmount imperfections in artificial fiber, by E. Pivovarova and P. Khoroshikh
Failure to arrange for supply of apparatuses blocks caprone production, by V. Petrov
Progress and setbacks of construction at the Rustavi caprolactam plant, by B. Mshvenieradze and others
First Georgian caprolactam expected by 1 May: some construction and installation organizations ahead of schedule, others lagging, by B. Mshvenieradze and others
High work tempo at caprolactam plant construction site: shortage of electrical fitters is main problem, by Ya. Gorelov and Yu. Petrushin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 68. 8 May 63, 50p.
JPRS: 19114.
Order from OTS $1.50 63-21789

Trans. of na Stroikakh Rossii (USSR) 1963, no. 2, p. 19-20 and 27; Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 1, inside back cover; Agitator (USSR) 1963, no. 5, p. 50-51; Narodnoe Khozyaistvo Uzbekistana (USSR) 1963 [v. 5] no. 2, p. 21-23, 69-71; Promyshlennoe Stroitel'stvo i Inzhernernye Sooruzheniya (USSR) 1963 [v. 5] no. 1, p. 1-3; and from Rabochaya Gazeta (USSR) 1963, 26 Feb; Stroitel'naya Gazeta (USSR) 1963, 1 Mar; 6 Mar.

DESCRIPTORS: *Industrial production, *Chemical industry, Chemical engineering, *Pipes, *Polyethlene plastics, *Polyvinyl chloride, *Industrial plants, Construction, Synthetic fibers, Synthetic rubber, Plastics, *Economics, *Transportation, Cargo vehicles, Railroads, *Furan resiin, *Fertilizers, Waste gases, Metallurgy.

Contents:
The properties and applications of polyethylene and polyvinyl chloride pipes
Capricious planning is preventing success in production, by G. Kirichenko and Ya. Rekrut
Experience in the construction of Chernigov synthetic fiber plant, by N. Pakhomov and others

Chemical construction, under social control
Lack of co-ordination at the Sumgait synthetic rubber plant, by A. Krichevskii and I. Svirin
New facilities at "Polivinilatsetat" plant
Experience and lessons of large-scale construction notes on the construction of the Balakovo synthetic fiber combine, by V. Selyunin
Strides of the large-scale chemical industry figures and facts
Choosing between rail and motor vehicle transportation of freight, by K. Khodzhaev
The need for increased production of furan polymers, by N. Oster-Volkov
Fertilizer raw materials from waste gases, by A. Lomov
Experience in the construction of metallurgical enterprises by chemical constructors, by V. Terent' ev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 20. 22 Apr 63, 13p. JPRS: 18825.
Order from OTS $0.50 63-21633

Trans. of Standartizatsiya (USSR) 1963 [v. 27] no. 3, p. 8-14.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Machines, *Standardization, *Reduction gears, *Transmission gears.

Contents:
Normalization of standard assemblies for chemical machine equipment, by B. A. Ershov
Standardization of reduction gears and motor reducers by I. V. Sigov and V. F. Veruga.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 21. 25 Apr 63, 11p. JPRS: 18916.
Order from OTS $0.50 63-21686

Trans. from Ekonomichskaya Gazeta (USSR) 1963 [no. 1(74)] 5 Jan, p. 42; Sovetskaya Litva (USSR) 1963, 13 Jan; Pravda, Leningrad (USSR) 1962, 24 Nov, p. 4; Izvestiya (USSR) 1962] 22 Dec, p. 4; Molod' Ukrainy (USSR) 1963, 9 Feb, p. 1 and 4.

DESCRIPTORS: *Chemical industry, *Industrial equipment, Machines, Automatic, Compressors, Acoustics, Particulate filters.

Contents:
For large-scale chemistry, by B. Belov
Panevezhskii auto-compressor production (excerpt from: The workers of the Panevezhskii auto-compressor plant are finding new reserves for the growth of the productivity of labor and equipment and for savings of stocks and materials) by V. Pozhela
Sound changes a profession, by I. Gencho
The hundred thousandth
Equip the chemical construction projects with latest machinery.

Amamiya, Tozoo.
SYNTHESIS FOR OXYGENOUS COMPOUNDS BY METAL CARBONYL CATALYST. [1962] 6p.
Order from OTS or SLA $1.10 62-18763

Trans. of published Japanese patent 36-14608, appl. no. 33-8441, 31 Mar 58, by Agency of Industrial Science and Technology.

DESCRIPTORS: *Oxygen compounds, Synthesis (Chemistry), *Catalysts, *Metalorganic compounds, Cobalt compounds, Iron compounds, Carbonyl radicals, Ion exchange resins, Ethylenes.

The invention concerns a synthesis for oxygenous compounds by the addition of carbon monoxide and hydrogen to the olefinic double bond, by the use of carbonyl compounds of metals, such as iron, cobalt, etc., as catalyst, and by adding carbon monoxide and hydrogen to the olefinic double bond; characterized by jointly using the said metals or their salts and the ion-exchanger which has been ion-exchanged with metals whose ionization tendency is less significant than that of the said metals, and conducting the reaction under the pressure, 40 to 200 atmospheres, of a synthetic gas (carbon monoxide plus hydrogen) and at the reaction temperature of 100 to 150°C. (Author)

Bander, O. -E., Hornig, L. and others.
PROCESS FOR THE OXIDATION OF OLEFINS TO ALDEHYDES, KETONES, AND ACIDS. [1963] 7p.
Order from ATS $13.75 ATS-76P66G

Trans. of German patent 1,130,428, appl. filed 5 Apr 58, appl. opened for public inspection and pub. 30 May 62, pub. 6 Dec 62.

DESCRIPTORS: *Ethylenes, Oxidation, *Aldehydes, *Ketones, *Acids, Processing.

Bauer, J. and Venzano, A.
A NEW PROCESS FOR CONTINOUS DISTILLATION OF CRUDE OIL, FUEL OIL, PETROLEUM RESIDUES, ETC. TO COKE. [1962] 4p. (figs. omitted) 6 refs.
Order from SLA $1.10 63-10482

Trans. of Petroleum Z[eitschrift] (Austria) 1937, v. 33, no. 45, p. 5-10.

DESCRIPTORS: *Distillation, *Oils, *Petroleum, *Coke, *Fuel oil.

Bidault, P., Langermeersch, A. van, and Malek, H. Khan.
PROCESS FOR THE ELIMINATION OF CARCINOGENIC HYDROCARBONS. [1963] 5p.
Order from ATS $6.00 ATS-23Q67F

Trans. of French patent 1,300,283, by Esso Standard Société Anonyme Française, filed 21 June 61, granted 25 June 62.

DESCRIPTORS: *Carcinogenic agents, *Hydrocarbons, Separation.

Blume, H., Munzing, J., and Sturtz, H.
DEVELOPMENT OF A CATALYST FOR THE REMOVAL OF ACETYLENE FROM AN ETHANE-ETHYLENE FRACTION BY SELECTIVE HYDROGENATION. [1963] 16p.
Order from ATS $19.75 ATS-87Q67G

Trans. of Chem[ische] Tech[nik] (East Germany) 1962, v. 14, no. 4, p. 214-221.
Another trans. is available from ATS $21.75 as ATS-64P64G [1962] 16p.

DESCRIPTORS: *Ethanes, *Ethylenes, *Hydrogenation, *Acetylenes, Separation, Catalysts.

Burek, Leon.
RAW OIL EMULSION SEPARATOR "METAN". 22 Nov 37 [8]p.
Order from SLA $1.10 63-10477

Trans. of Petroleum (Germany) 1924, v. 20, no. 34, p. 1887-1891.

DESCRIPTORS: *Oils, *Colloids, Separation, Petroleum, *Refineries, Heat treatment.

Chassignolle, J. and Jarrault, B.
THE NEW KUHLMANN PROCESS FOR THE MANUFACTURE OF NITRIC ACID. [1963] 11p.
Order from ATS $15.50 ATS-98Q66F

Trans. of Ind[ustrie] Chim[ique] (France) 1962 [v. 49] no. 537, p. 1-5.

DESCRIPTORS: *Nitric acid, Manufacturing methods.

Honorat, R.
AN ELECTRONIC SOLUTION TO THE PROBLEM OF DETECTING WATER IN PETROLEUM. [1963] 5p.
Order from ATS $6.50 ATS-58P65F

Trans. of l'Industrie du Pétrole (France) 1962, v. 30, p. 40-41, 43.

DESCRIPTORS: *Water, Detection, *Petroleum, Electronics.

Kirschbaum, E., Busch, W., and Billet, R.
RECTIFICATION IN PACKED TOWERS AT ATMOSPHERIC PRESSURE AND AT REDUCED PRESSURES. [1963] 22p.
Order from K-H $22.00 K-H 5486 a

Trans. from Chemie-Ingenieur-Technik (West Germany) 1956 [v. 28] no. 7.

DESCRIPTORS: Purification, *Distillation, *Towers (Chemistry), Pressure.

Kraft, J., Thermet, R., and Parvi, L.
CHLORINATION OF HYDROCARBONS IN GASEOUS PHASE. [1963] 17p.
Order from K-H $17.00 K-H 12693 c

Trans. of Chimie et Industrie (France) 1960, v. 83, no. 4, p. 557-563.

DESCRIPTORS: *Chlorination, *Hydrocarbons, Gases.

Krasyukov, A. F.
THE SELECTION OF COKING INSTALLATIONS. [1963] 6p.
Order from ATS $8.00 ATS-83Q67R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 10, p. 32-36.

DESCRIPTORS: *Coke, Installation.

Kunin, T. I. and Epifanov, V. S.
ON THE PROBLEM OF THE REACTION OF SODA WITH SULFUR DIOXIDE IN A FLUIDIZED BED (K Voprosu o Vzaimodeistvii Sody s Sernistym Angidridom v Kipyashchem Sloe). [1962] [15]p. (foreign text included) 11 refs.
Order from OTS or SLA $1.60 63-10751

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1961, v. 4 [no. 6] p. 992-997.

DESCRIPTORS: *Fluidized solids, *Sodium compounds, Oxides, *Sulfur compounds, Dioxides, Chemical reactions, Adsorption, Water vapor, Temperature.

The influence of various factors on the rate of the reaction between soda and sulfur dioxide under fluidized bed conditions was investigated. The concentration of water vapor in the gaseous phase and the temperature of the process exerted a strong influence on the rate of adsorption of sulfur dioxide by the soda. At low temperatures (up to 50°), an increase in concentration of water vapor led to an increase in the adsorption rate. In the presence of oxygen, the increase in the water vapor concentration led to an increase in the rate of oxidation of the sulfite salts. At elevated temperatures (above 100°), a change in the concentration of the water vapor did not exert as strong an influence as at low temperatures and the rate of oxidation fell sharply. The adsorption rate of sulfur dioxide has a minimum in the temperature interval to 150°, corresponding to a temperature of around 50°C. The sulfur dioxide concentration in the gas and the linear gas rate exert an insignificant influence on the rate of the process. There appears to be a limited diffusion of gas within the particles in the solid phase in the process. (Author)

Mathes, W. and Raschig, F.
THE RASCHIG PROCESS FOR THE PREPARATION OF PHENOL. [1963] 9p.
Order from K-H $9.00 K-H 11592

Trans. of Angewandte Chemie 1939, v. 52, no. 37, p. 591-598.

DESCRIPTORS: *Phenols, Synthesis (Chemistry)

Mercier, Jules.
METHOD FOR THE SEPARATION OF MIXTURES RESULTING IN THE HYDROLYSIS OF ACETIC ACID ESTERS OF LOW-MOLECULAR ALKANOLS. [1962] 11p. (figs. omitted).
Order from OTS or SLA $1.60 62-18658

Trans. of German patent 1,122,933, U 4992 IVb/12o, appl. 17 Dec 57, issued 1 Feb 62 (Priority: France 26 Feb 57, no. 732,666) by Les Usines de Melle Société Anonyme, France.

DESCRIPTORS: *Acetic acids, Alcohols, Esthers, *Acetates, Methyl radicals, Hydrolysis, Separation, Ion exchange resins, *Towers (Chemistry).

Pfaff, Walter and Hoffmann, Karl.
REMOVAL OF OXYGEN AND MOISTURE FROM ARGON, NITROGEN AND HYDROGEN. [1962] 3p. 7 refs.
Order from SLA $1.10 62-14336

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1959, v. 30, no. 9, p. 539-540.

DESCRIPTORS: Separation, *Oxygen, *Moisture, *Argon, *Nitrogen, *Hydrogen, Oxidation, *Purification, Aluminum alloys, Magnesium alloys.

Two methods are described for the simple purification of argon, nitrogen and hydrogen. Their efficiency is of such an order that tarnishing and internal oxidation of iron samples at elevated temperatures is prevented. (Author)

Sakhanov [A. N.] and Tilicheev [M. D.].
THE CRACKING OF HEAVY OILS AND MAZUT. [1962] [53]p. 23 refs.
Order from OTS or SLA $5.60 63-10419

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1928, v. 14, p. 328-358.

DESCRIPTORS: *Petroleum, *Oils, Decomposition, Fuel oils, *Gasoline, Coke, Production

Schmidt, H. and Haberl, K.
MEASURES FOR THE PREVENTION OF ACETYLENE DECOMPOSITION AT LOW PRESSURES. [1962] [14]p. 6 refs.
Order from SLA $1.60 62-18963

Trans. of Tech[nische] Überwach[ung] (West Germany) 1955 [v. 7(50)] no. 12, p. 423-429.

DESCRIPTORS: *Acetylenes, Low pressure research, Decomposition, Ignition, Inhibition, *Explosions, Pipelines, Safety valves, Cut-off valves, *Towers (Chemistry).

The authors succeeded in inducing explosive or detonative acetylene decomposition in the pressure range between 1.0 and 1.4 atm. abs. by means of an ignition chamber. The irrigated Raschig ring tower must be considered as the safest decomposition arrester both with stagnant and with flowing gas. An automatically operating quick shut-off valve used in conjunction with a length of pipeline filled with dry Raschig rings as a retarder has been tested and found to be satisfactory. (Author)

Ssachanow, A. N. and Tilitschejew, M. D.
THE CHEMISTRY OF THE CRACKING-PROCESS. [1962] 15p. 11 refs.
Order from SLA $1.60 63-10417

Trans. of [Chemische] Ber[ichte] (Germany) 1929, v. 62, p. 658-677.

DESCRIPTORS: *Hydrocarbons, Decomposition, Chemistry, Chemical reactions, Petroleum, Methanes, Benzines, Naphthalenes, Ethylenes, Thermodynamics, *Gasoline.

Steinbrecher, Hans.
REFINING OF MINERAL OILS BY COLD FRACTIONATION. 12 May 31, 15p. 15 refs.
Order from SLA $1.60 63-10432

Trans. of Braunkohlenarchiv (Germany) 1930, no. 31, p. 1-10.

DESCRIPTORS: *Mineral oils, *Fractionation, Temperature, Benzenes, Hydrocarbons, Solvents, Alcohols, Chemical analysis, Petroleum.

Weiss, G.
PRODUCTION OF HEAVY WATER BY THE DUAL-TEMPERATURE H_2S-H_2O EXCHANGE PROCESS. [1963] 17p.
Order from ATS $19.75 ATS-79Q67G

Trans. of Chem[ie]-Ing[enieur]-Tech[nik] (West Germany) 1958, v. 30, no. 7, p. 433-440.

DESCRIPTORS: *Heavy water, Temperature, Hydrogen compounds, Sulfides, *Ion exchange, Water

Yurkov, A. O.
REJECTION OF HOT PETROLEUM IN CONNECTION WITH THE WATER CONTAINED. [1962] 6p.
Order from OTS or SLA $1.10 63-10403

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1929 [v. 17] no. 3, p. 362-363.

DESCRIPTORS: *Petroleum, Water, Heat, Chemical reactions, Refineries, Quality control.

Civil Engineering

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY: [SELECTED] TRANSLATIONS NO. 27 (ARTICLES ON HOUSING CONSTRUCTION). 17 Apr 63 [52]p. JPRS: 18745.
Order from OTS $1.50 63-21595

Trans. of Chien Chu Hsüeh Pao (Chinese People's Republic) 1962, no. 7, p. 10-18 and 25-27.

DESCRIPTORS: *Housing, Design, Construction, *China.

Contents:
A study of styles and characteristics of folk dwellings in Chekiang, by Wang Chih-li
Brief description of a housing design contest in the Southwest.

LATTICE BRIDGE THAT CAN BE DISASSEMBLED AND TRANSPORTED, tr. by J. R. -P. 13 Dec 62, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-13739

Trans. of Austrian patent 63,959 (addition to patent 31,354) cl. 19b, by Fa. IG. Gridl, appl. 11 Mar 12, pat. from 15 July 12, pub. 26 Mar 14.

DESCRIPTORS: *Bridges, Construction, Transportation, Beams (Structural)

Brendel, G.
STUDY REGARDING THE DESIGN OF T-SECTIONS (T-BEAMS) WITH CONSIDERATION OF PRESENT CODES. [1962] [25]p. 26 refs.
Order from SLA $2.60 62-18774

Trans. of Comité Européen du Béton [Paris] Bulletin d'Information (France) 1958, no. 8.

DESCRIPTORS: *Beams (Structural), Structural parts, Design, Concrete, Elasticity, Deformation, Stresses, Compressive properties, Reinforced concrete.

Electrical and Electronic Engineering

BAY FOR REMOTE CONTROL OF AMPLIFIER AND TRANSFORMER SUBSTATIONS. 17 Feb 60 [2]p. [US]ASIA SC-104h/59.
Order from OTS or SLA $1.10 62-32791

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 9[234] inside back cover.

DESCRIPTORS: *Remote control systems, Audio amplifiers, *Transformers, *Radio relay stations.

This bay was designed for remote control of substations by monitoring broadcast programs going by trunk lines to a central wire broadcasting station. This device makes it possible to spot check substations, to automatically by-pass, and to cut out nonoperating (reserve) amplification channels. The bay includes a relay unit, a pulse generator, and an inverse audio control amplifier. The relay unit was designed for monitoring 80 substations. With the automatic by-pass, the length of time for monitoring each substation is three seconds. The equipment was build in the Leningrad civil radio relay network. (Document quoted in its entirety.)

CAPACITIVE VOLTAGE TRANSFORMER, tr. by J. B. 26 Dec 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13751

Trans. of Italian patent 410,281, cl. IX, by "Fides" Gesellschaft für die Verwaltung und Verwertung von Gewerblichen Schutzrechten m.b.H., Germany, appl. 21 Sep 43, granted 3 Apr 45, printed Apr 47 (appl. S-152711 filed in Germany in the name of Siemens & Halske A. G., 23 Oct 42).

DESCRIPTORS: *Power transformers, Capacitance, Electric potential, Voltage dividers, Inductance, Resonance, Oscillator circuits, Design, Operation.

CIRCUIT FOR DETERMINING TRANSISTOR HIGH FREQUENCY CHARACTERISTICS. May 63, 224 words (foreign text included).
Order from WBI $2.00

Trans. of main claims, including drawings, of published Japanese patent 37-17719, 30 Oct 62.

DESCRIPTORS: *Transistors, High frequency, Circuits, Tests, Oscillographs.

DEVICE FOR LIMITING THE OVERVOLTAGE BETWEEN THE TERMINALS OF A SERIES CAPACITOR BY MEANS OF A BRIDGE CONTAINING IN SERIES A FERRIC INDUCTANCE COIL AND AN OHMIC RESISTANCE, tr. by J. B. 20 Dec 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13745

Trans. of French patent 846,704, gr. 12, cl. 6, by Société Savoisienne de Constructions Électriques, appl. 28 Nov 38, granted 12 June 39, pub. 25 Sep 39 (appl. filed in Germany 11 Dec 37).

DESCRIPTORS: *Limiters, Electric terminals, Electric potential, Capacitors, Electric bridges, Coils, Resistance (Electrical).

The invention relates to a device for limiting the overvoltage of a series capacitor by means of a bridge connected to the terminals of the capacitor and containing an ohmic resistance and a ferric inductance coil which, in the case of normal voltage of the capacitor, is slightly saturated, but becomes strongly saturated in the case of a voltage of two to four times the normal value. (Author)

ELECTRON BEAM RECORDING SYSTEM. May 63, 1059 words (foreign text included).
Order from WBI $5.00

Trans. (including drawings) of published Japanese patent 37-17732, 30 Oct 62.

DESCRIPTORS: *Electron beams, Recording systems.

HERALD OF COMMUNICATIONS, 1963 [VOL. 23] NO. 1(274). 6 May 63, 157p. JPRS: 19045.
Order from OTS $3.00 63-21745

Trans. of Vestnik Svyazi (USSR) 1963 [v. 23] no. 1(274) p. 1-35.

DESCRIPTORS: *Communication systems, *Electronics, Communication equipment, Operation, Electrical engineering, Economics, Construction, Engineering personnel.

Contents:
Work of communication facilities -- to the level of new goals (editorial)
Radio-communication, radio-broadcasting and television facilities have to be improved, by A. L. Badalov

We are putting into use new equipment, by I. V. Klebanov
A course aimed at public principles, by G. Abidov
Labor productivity in construction has to be raised
The needs of rural radiofication, by T. I. Popkov
Crossbar ATS [Automatic Telephone System] K-100/2000, by B. S. Livshits and G. B. Khanin
Modernized automatic voltage-regulation rack, by L. A. Spasskaya and M. I. Soloveichik
Power amplification of the relay system trsa-56, by E. I. Gutkin and others
Stabilized rectifier employing semiconductor devices, by P. M. Paznikov and L. V. Granitskii
Labor productivity at communications enterprises and methods of raising it, by O. S. Srapionov and S. R. Esikov
Green lights for the long distance through calls
Organization of delivery service in Voronezh, by M. P. Rozanov
Communication workers of Ukrainian SSR can and must work better
Production problems are at the center of attention, by L. Ya. Yakovlev
This is the way Soviet communication workers act
Competition for the title "Communist-labor main line," by V. I. Osipova
Literature for communication workers, by B. A. Voronov

INVESTIGATIONS ON WEAR OF ELECTRICAL CONTACTS. 26 Apr 63, 72p. 24 refs. JPRS: 18926.
Order from OTS $2.00 63-21692

Trans. of mono. Elektricheskie Kontakty - Trudy Soveshchaniya 26-28 Noyabrya 1956 G. (Electrical Contacts - Proceedings of the 26-28 November 1956 Conference) Moscow/Leningrad, 1958, p. 171-199, 214-238.

DESCRIPTORS: *Electrical equipment, Electric switches, *Cermets, Alloys, Ceramic materials, Powder metallurgy, *Friction, Resistance welding, Mechanical properties, Production, Material forming, Microstructure, Resistance (Electrical).

Contents:
Modern metal-ceramic electrical contacts, by A. B. Al'tman and others
Development of metal-ceramic contacts, by I. N. Frantsevich and O. K. Tedorovich
Problem concerning the structure of wear-resistant electrical contacts, by A. B. Al'tman and E. S. Bystrova
Properties of some cermet contact materials, by I. E. Dekabrun.

MAGNETIC RECORD PRINTER. May 63, 1009 words (foreign text included).
Order from WBI $5.00

Trans. (including drawings) of published Japanese patent 37-16921, 19 Oct 62.

DESCRIPTORS: *Magnetic recording systems, Printing, Reproduction, Records.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIO ENGINEERING SERIES, 1962, VOL. 5, NO. 5. 6 May 63, 293p. JPRS: 19052.
Order from OTS $4.00 63-21748

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1962, v. 5, no. 5, p. 543-659.

DESCRIPTORS: *Radio, *Electronics, *Engineering, Transients, Waveguides, Modulators, Band spectrum, Electromagnetic waves, Transistor amplifiers, Excitation, Waveguide filters, Phase shifters, Interference, Noise (Radio), Errors, Statistical functions, Harmonic analysis, Electric currents, Dielectrics, Education.

Contents:
Parametron with ferromagnetic cores. II. Representation of states of parametron on the vander-pol plane; transients, by K. M. Polivanov and others
Frequency spectrum of waveguide single-band modulators, by M. S. Yanovskii and B. N. Knyaz'kov
Surface spin waves, by M. A. Savchenko and L. A. Shishkin
Figure of merit of a transistorized amplifier stage, by Yu. A. Volkov
Approximate calculation of the slowing down of a surface wave over a flat ridge, by A. S. Zav'yalov
Excitation of diaphragmed waveguide of rectangular cross section, by A. P. Ol'shanskii
Waveguide band elimination adjustable filter, by V. A. Klimov
Amplification of small phase shift variations between two electric signals, by A. N. Ermakov and others
Interference immunity of the reception of signals with discrete values in the case of correlated noise, by V. F. Nesteruk
Interference immunity of time-position determination of a weak pulsed signal hidden in fluctuating noise, by Yu. P. Ozerskii
Detection of a pulsed noise against the background of a radiotelephone signal, by M. V. Litvin
On the estimate of the error caused by a continuous variation in the delay time when measuring the autocorrelation function, by G. A. Ball
Approximate determination of the value of a parameter transmitted over a communication channel with gaussian additive noise and rayleigh multiplicative noise, by V. F. Krapivin and G. B. Linkovskii
Harmonic analysis in the approximation of a current by cut-off parabolas, by Yu. N. Bolotov
Calculation and measurements of the coupling impedance of a helix with coaxial dielectric tubes, by A. S. Bondarev
Meter for small phase-modulation indices, by D. I. Sheinman
Accuracy of measurement of the frequency of a fluctuating signal against the background of a white noise, by E. I. Kulikov
Linearization of sawtooth voltage with the aid of semiconductor devices, by V. I. Samoilenko
Accuracy of measurement of small changes in the capacitance and inductance by a resonant method, by Ya. N. Kolli and A. L. Frumkin
On the design of narrow band amplifiers, by V. G. Kriksunov
Reasons for discrepancy between expressions for stable gain as obtained by V. I. Siforov and A. A. Kolosov
Helical line with adjustable delay time, by V. T. Annenkov and V. S. Brykov
Scientific-technical conference in kiev devoted to the day of radio, by O. M Gaplichuk

TRANSISTOR AUTOMATIC GAIN CONTROL SYSTEM. May 63, 243 words (foreign text included). Order from WBI $2.00

Trans. of main claims, including drawings, of published Japanese patent 37-16310, 12 Oct 62.

DESCRIPTORS: *Transistors, *Automatic gain control.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 44. 30 Apr 63, 15p. JPRS: 18978. Order from OTS $0.50 63-21719

Trans. of Promyshlennaya Energetika (USSR) 1962 [v. 17] no. 2, p. 44, 54-56.

DESCRIPTORS: *Industrial production, *Electrical equipment, Drives, Transformers, Relays, *Plastic coatings, *Pipes, Steel, Polyethylene plastics, Vinyl plastics, Electric motors, Hoists.

Contents:
New electrical equipment
Heat engineering: polyethylene plastic and steel pipes lined with vinyl plastic
Electrical engineering: new series Mt-MTK 000-700 crane and metallurgical motors.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 45. 30 Apr 63, 17p. JPRS: 19015. Order from OTS $0.50 63-21734

Trans. from Bakinskii Rabochii (USSR) 1962, 21 Oct, p. 1; Kommunist [Erevan] (USSR) 1962, 23 Oct, p. 3; Pravda, Leningrad (USSR) 1962, 21 Oct, p. 2; Sovetskaya Kirgiziya (USSR) 1962, 16 Oct, p. 2; 20 Oct, p. 2.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Arc welding, Glass, Electric insulation, Industrial plants, Economics, Quality control, Management engineering, Personnel management, Welding.

Contents:
New electric welding unit for field work
Production of glass insulators in the Armenian SSR, by A. Mokatsyan
Production of electric welding equipment at the Elektrik Plant, by A. Yashunskii
Waste of material resources in industrial enterprises of the Kirgiz sovnarkhoz, by M. Savel'ev
Hidden shortcomings in the operations of the Krasnyi Metallist Plant, by F. Kobylinskii.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 46. 7 May 63, 9p. JPRS: 19101. Order from OTS $0.50 63-21783

Trans. of Byulleten' Tekhniko Ekonomicheskoi Informatsii (USSR) 1963, no. 2, p. 58-60; and Vneshnyaya Torgovlya (USSR) 1963 [v. 43] no. 3, p. 30-31.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Electric motors, Design, Industrial plants, Commerce, Electric machinery.

Contents:
Single series P direct current electric motors of zero dimension, by P. R. Baryshev and A. A. Khavin
Production and export of the Moscow dinamo plant, by M. Azarkh and N. Zverev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 47. 8 May 63, 14p. JPRS: 19113. Order from OTS $0.50 63-21788

Trans. of Mashinostroitel' (USSR) 1963, no. 2, p. 47; Sotsialisticheskii Trud (USSR) 1962 [v. 7] no. 12, p. 23; Steklo i Keramika (USSR) 1963 [v. 20] no. 1, p. 23-25.

DESCRIPTORS: *Industrial production, *Electrical equipment, Industrial plants, *Arc welding, Automation, *Cermic materials, Electric insulation, Power.

Contents:
Vil'nyus electric welding equipment plant increases production, by S. Kozinova
Some accomplishments of two Volgograd power enterprises, 1960-62
An increase in the service-life of saggers for firing hanging insulators, by P. M. Bugai.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 68. 22 Apr 63, 6p. JPRS: 18831. Order from OTS $0.50 63-21636

Trans. from Radio, Moscow (USSR) 1963, no. 2, p. 36-37, 41.

DESCRIPTORS: Industrial production, Precision equipment, *Television, Television equipment, *Magnetic recording systems.

Contents:
The "Smena" television set, by B. Alievskii and K. Runov
The "Yauza-10" stereophonic tape recorder, by M. Ganzburg and others.

Aulmann, A.
ELECTRONIC APPARATUS IN THE TELETYPE MEASURING TECHNIQUE. [1962] 7p. (figs. omitted). Order from SLA $1.10 62-18151

Trans. from VDE [Fachberichte] (West Germany) 1952, v. 16 (Siemens Entwicklungsberichte [sic] (West Germany) 1953, v. 16 [no. 7] p. 117-120.

DESCRIPTORS: *Electronic equipment, *Teletype systems, Measuring devices (Electrical and electronic), Signals, Distortion, Telegraph signals, Transmission.

Bonch-Bruevich, A. M. and Shirokov, V. I.
SOME PROBLEMS OF PHASE MEASUREMENTS.
[1962] 26p. 17 refs.
Order from OTS or SLA $2.60 UCRL Trans-734

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1955, v. 25, p. 1825-1842.

DESCRIPTORS: *Phase measurement, Fluorometers, Instrumentation, Errors, Vector analysis, Interference Graphs, Distortion

The design of phasometric part of a fluorometer necessitated the study of the sources of error of phase measurements. The results obtained constitute the contents of this paper. They may prove useful in the construction of phasometric apparatus for various uses. (Author)

Bricka, M. and Bruck, H.
ON A NEW ELECTRONIC GUN FOR HIGH VOLTAGE TUBES. [1962] 13p. (figs. omitted).
Order from SLA $1.60 62-18566

Trans. of Annales [de] Radioélectricité (France) 1948, v. 3 [no. 14] p. 339-343.

DESCRIPTORS: Cathode ray tubes, *Electron guns, Design, Resolution, *Electron microscopes, *Diffraction analysis.

A description is given of an electronic gun for use in diffraction analyzers and microscopes. Included are results of measurements of the geometric definition of the spot and the yield. The gun, used without a condenser, realizes at 45 kV a current density ten times higher and a yield of about 20%, or 13 times higher than that of the conventional gun without condensor. The total consumption of high voltage current is approximately equal to 40 A. (Author)

Epstein, Arnold and Crifay, Stanley Milton.
THERMOELECTRIC BODY. [1962] 14p.
Order from OTS or SLA $1.60 63-10261

Trans. of Japanese patent publication 62-15974, appl. 60-47388, date of pub. 8 Oct 62, date of appl. 5 Dec 60 (priority claimed: 7 Dec 59, USA) by Monsant Chemical Co., St. Louis, Mo. (USA).

DESCRIPTORS: *Thermoelectricity, Solids, Powders, Direct current, Pressure, Material forming, Chemical compounds, Silver compounds.

Fischer, K.
ON THE PRESENT STATE OF QUARTZ CONTROL AND FREQUENCY GENERATION. [1962] 28p. 15 refs.
Order from SLA $2.60 62-18861

Trans. of Frequenz (Germany) 1961, v. 15, no. 10, p. 324-332.

DESCRIPTORS: *Crystal oscillators, *Quartz, Coils, Capacitors, *Frequency stabilizers, Pulse generators, Pulse discriminators, Circuits.

The increasing requirements with respect to stability of frequency lead to frequent applications of frequency synthesizing circuits, by means of which it is possible to generate a large number of switchable carrier frequencies for transmitters or oscillator frequencies for receivers from one or a few quartz controlled standard frequencies. Besides, the number of possible circuits is large so that anyone who is not a specialist in this field is faced with a confusing variety of possibilities. This paper aims to develop the common basic elements of such arrangements with the aid of a certain systematic order and to explain suitable combinations of them. (Author)

Gershuni, I. M. and Karaulov, A. N.
TRANSISTORIZED VOLTAGE STABILIZER (Stabilizator Napryazheniya na Poluprovodnykh Elementakh). Apr 63, 12p. 2 refs. NASA Technical Trans. F-155; N63-14210.
Order from OTS $0.50 63-11602

Trans. of Tsifrovaya Tekhnika i Vychislitel'nye Ustroistva (USSR) 1962, no. 3, p. 110-115.

DESCRIPTORS: *Voltage regulators, *Transistors, Transistor amplifiers, Current regulators, Feedback amplifiers.

A seven-transistor voltage stabilizer with an output power of about 25 watts is described. Due to a relatively high amplification factor and the use of a current-stabilizing two-terminal network, the circuit insures a stabilization factor of the order of $2 \cdot 10^3$ - $3 \cdot 10^3$, the corresponding output resistance being not more than 0.005 ohm. By introducing a feedback coupling into the balancing stage of the amplifier it is possible to limit the drift in output voltage associated with temperature changes to 3.3 mv/degree. (Author)

Gorskii, A. A.
THE QUESTION ON THE SYNTHESIS OF OPTIMAL CORRECTING DEVICES [K Voprosu Sinteza Optimal'nykh Korrektiruyushchikh Ustroistv]. [1962] [12]p. 4 refs.
Order from OTS or SLA $1.60 63-10307

Trans. of Moscow U. Vestnik. [Seriya 1: Matematika] Mekhanika (USSR) 1960 [v. 15] no. 6, p. 51-59.
Another trans. is available from OTS $0.50 as 61-21608 JPRS-9137, 1 May 61, 18p.

DESCRIPTORS: *Control systems, *Computers, Synthesis, Corrections, Mathematical prediction, Calculus of variations, Differential equations, Integral equations.

Inose, Hiroshi, Yasuda, Yasuhiko and others.
SUBSCRIBER-LINE CIRCUIT FOR AN EXPERIMENTAL TIME DIVISION EXCHANGE SYSTEM FEATURING DELTA MODULATION TECHNIQUES. [1962] 19p. 3 refs.
Order from SLA $1.60 62-18842

Trans. of [Denki Tsushin Gakkai Zasshi] (Japan) 1961, v. 44, no. 9, p. 1322-1328.

DESCRIPTORS: *Telephone communication systems, *Pulse modulation, Telephone equipment, *Modulators, *Oscillators, Circuits, Signal-to-noise ratio.

A subscriber-line circuit was devised for the following conditions: frame frequency, 50 kc/s; number of talking channels, 19; number of synchronous channels, 1; the time-slot for each channel, 1 μs; width of channel pulse, 0.5 μs; height, 0.1 μs. Each subscriber is equipped with a modulator and demodulator. Satisfying results were obtained by using a stability blocking oscillator as a stabilizing circuit. The same oscillator was used as a demodulator, and the integration method was adopted to enlarge the width of the pulse subjected to delta modulation. This system, apart from its application in the receivers of subscriber-line circuits, can also be used for highway control, ect. The characteristics of the subscriber-line circuits agree almost completely with the theory. (Author)

Khazanov, V. S. and Fomina, A. M.
ON THE QUALITY OF TYPE Yu-16 LUXMETERS.
1961 [5]p. 2 refs. AERDL T-1659; AD-290 554.
Order from OTS or SLA $1.10 63-13404

Trans. of [Russian] article from an unidentified source, n. d.

DESCRIPTORS: *Photometers, Reliability, Design, Lighting systems.

The Type Yu-16 Luxmeter consists of a rectangular selenium photo-element, with a working area of 25 cm^2 and a meter of 1.0 accuracy. The luxmeter has three basic measurement ranges of 25-100-500 lux and three supplementary ranges of 2, 500-10, 000-50, 000 lux, obtained by means of an absorber mounted on the photo-element. The absorber consists of a metal frame holding two plates of frosted damped lucite. Between the two layers of lucite, there is an insert of opaque material with small openings. In accordance with technical specifications, the basic error of the luxmeter, with respect to its primary ranges, is $\pm$10% and, in its supplementary ranges, $\pm$15%, of the magnitude measured. To improve the quality of luxmeters of Type Yu-16, the following must be accomplished: (1) the quality of the selenium photo-elements must be greatly improved, and only photo-elements that have naturally aged over a period of 6-12 months should be installed in the luxmeters; (2) the absorber design must be changed: a smooth-surface plastic should be substituted for the matte plastic so that its surface can be kept clean; (3) to insure stability of the photo-element's sensitivity, the sensitive layer must be better protected against moisture. (Author)

Kirsanov, V. I. and Rabinovich, M. B.
TRANSMITTER OF TYPE 1:1 TELEGRAPH SIGNALS (INTERRUPTOR). 17 Feb 60 [6]p. [US]ASIA SC-104f/59.
Order from OTS or SLA $1.10 62-32790

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 9[234] p. 10-12.

DESCRIPTORS: *Interrupters, *Telegraph equipment, *Telegraph signals.

This article contains a description of a type 1:1 telegraph signals transmitter for checking and tuning voice frequency carrier telegraph channels. (Author)

Koval'skaya, O. T., Lavrukhin, A. M. and others.
COMPARISON OF CORONA LOSSES ON A-C AND D-C ELECTRIC POWER TRANSMISSION LINES WITH EQUAL BUNDLE CONDUCTORS [Sravnenie Poter'na Koronu na Liniyakh Peredachi Peremennogo i Postoyannogo Toka s Odinakovymi Rasshchyplennymi Provodami] tr. by A. A. Osipovich. July 62 [13]p. 10 refs.
Order from OTS or SLA $1.60 62-32774

Trans. of Nauchno-Issledovatel'skii Institut Postoyannogo Toka. Izvestiya (USSR) 1960, v. 6, p. 155-163. Another trans. is available from NRCC $0.50 as NRCC C-4130, NRCC TT-1047, 1962, 9p.

DESCRIPTORS: Conductors, *Transmission lines, *Electric power production, Direct current, Alternating current, *Electrical corona, Measuring devices (Electrical and electronic).

Litvinov, S. Ya. and Sarkisov, I. K.
CONTRIBUTION TO THE THEORY OF USING PIPE AS AN ELECTRICAL COMMUNICATION CHANNEL. [1963] 8p.
Order from ATS $9.65 ATS-04Q68R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1959, v. 2, no. 2, p. 99-105.

DESCRIPTORS: *Pipes, Transmission lines, Communication equipment, Theory, Ducts.

Matusch, G.
ELECTRONIC START-STOP DISTORTION METER. [1962] 3p. (figs. omitted).
Order from SLA $1.10 62-18921

Trans. of [NTZ; Nachrichtentechnische Zeitschrift] (West Germany) 1953 [v. 6, no. 6] p. 279-281.

DESCRIPTORS: *Telegraph equipment, Telegraph signals, Distortion, Measurement, Cathode ray tubes, Circuits.

A description is given of a tube circuit employed for measuring the start-stop distortion of teleprinter signals. A cathode-ray tube is used as indicator and a telegraph relay is used as an input member. The electromechanical start-stop distortion meter is replaced by this new instrument. (Author)

Novak, M.
STEEP-SLOPE FILTERS WITH MAXIMALLY FLAT ATTENUATION CHARACTERISTIC WITHIN THE PASS BAND. [1963] 14p.
Order from ATS $16.50 ATS-27Q67C

Trans. of Slaboproudy Obzor (Czechoslovakia) 1961, v. 22, no. 3, p. 153-159.

DESCRIPTORS: *Band-pass filters, Filters (Electromagnetic wave), Attenuation, Electronic equipment.

Popov, A. M.
DESCRIPTION OF A CASE WHEN THE WHITE ENVELOPE OF AN UNDERGROUND PRVPM CABLE TURNED BLACK. 17 Feb 60 [5]p. [US]ASIA SC-104g/59.
Order from OTS or SLA $1.10 62-32792

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 9[234] p. 12.

DESCRIPTORS: *Electric cables, *Electric insulation, Resistance (Electrical), Underground structures.

This is a description of a case when the sheathing of a PRVPM white cable turned black in the ground. The results of measurements made of electrical resistance values of insulation that turned black under natural and laboratory conditions made over a twenty-month period are cited. It was established that when the sheathing turns black, its quality does not deteriorate. (Author)

Salow, H.
MODERN PERFORMANCE DATA OF TRANSISTORS AND RESULTING POSSIBILITIES OF APPLICATION TO TELEPHONE SYSTEMS. [1962] 8p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-20350

Trans. of [NTZ; Nachrichtentechnische Zeitschrift] (West Germany) 1954 [v. 7, no. 7] p. 327-333.

DESCRIPTORS: *Telephone communication systems, Telephone equipment, Telephone repeaters, *Transistor amplifiers, *Push-pull amplifiers, Circuits, Semiconductor devices, *Transistors, Physical properties, Stability, Operation.

The physical-technical properties of the crystal amplifier or transistor and its quadripole characteristics are represented. The output data, which were obtained on on laboratory specimens of point contact- and junction-transistors, as well as the results attained by the American industry are described. The quality-characteristics of transistors and the possibilities of application in the telephone industry are discussed, and it is shown that the junction transistor represents an ideal amplifier-element for the low-frequency technique and that its output data today satisfy the requirements of a 12-channel carrier-frequency system. It is however, to be expected that even requirements of systems with more channels can be met within a short time. A push-pull circuit of an npn- and a pnp- transistor affords the possibility of accomodating the waiting-position without energy-consumption. (Author)

Schilling, Walter.
CONSTRUCTION AND CHARACTERISTICS OF A TYPE-SERIES OF RING CORE AMPLIFIERS 1...100 W WITH SATURATION ANGLE CONTROL. [1962] 9p. (figs. tables formulae omitted).
Order from SLA $1.10 62-18603

Trans. of Archiv für Technisches Messen [und Industrielle Messtechnik] (West Germany) 1953, Apr, p. 91-94.

DESCRIPTORS: *Amplifiers, Magnetic cores, *Magnetic amplifiers, *Transducers, Construction, Circuits, Electrical properties, Rectifiers, Transformers.

Simon, J. C.
OMNIDERECTIONAL ANTENNA, "PINE CONE" TYPE. [1962] [11]p. 2 refs.
Order from SLA $1.60 63-10745

Trans. from Compagnie Générale de T[élégraphie] s[ans] F[il] Paris (France). Internal Rept-CSF/CRT, 1955.

DESCRIPTORS: Antennas, *Omnidirectional antennas, Construction, Tests.

Steinbuch, K.
ELECTRONIC SWITCHING ELEMENTS IN THE EXCHANGE TECHNIQUE. [1962] 15p. (figs. omitted).
Order from SLA $1.60 62-20347

Trans. of [NTZ; Nachrichtentechnische Zeitschrift (West Germany) 1952, v. 5, no. 8, p. 349-356.

DESCRIPTORS: *Telephone communication systems, Telephone equipment, Electronic equipment, *Electronic switches, Electron tubes, *Discharge tubes, *Cold cathode tubes, *Variable resistors, *Thermistors, *Thyratrons, *Transistors, *Memory devices, *Switching circuits.

Modern electronic switching elements which may become important for the exchange technique are described from the standpoint of their application in switching, and a few characteristic switching combinations were examined (Author)

Steyskal, H. and Gezelius, R.
PROBLEMS CONCERNING MATERIALS IN ELECTRON TUBE TECHNIQUE. 24 May 52, 19p. (figs. tables omitted) 36 refs.
Order from SLA $1.60 62-20344

Trans. of Teknisk Tidskrift (Sweden) 1950 [v. 80, no. 31] p. 741-750.

DESCRIPTORS: *Electron tubes, Design, Construction, Cathodes, Dielectries, Metals, Gold, Silver, Copper, Iron alloys, Soldering, Sintering, Glass, Ceramic materials, Glass seals.

Stoyanov, M. N.
AUTOMATION OF INTER-URBAN TELEPHONE AND TELEGRAPH COMMUNICATIONS: ONE OF THE IMPORTANT TASKS OF THE SEVEN-YEAR PLAN. 17 Feb 60 [7]p. [US]ASIA SC-104b/59.
Order from OTS or SLA $1.10 62-32786

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 9[234] p. 3-4.

DESCRIPTORS: *Telegraph systems, *Telephone communication systems, *Automation.

Wiessner, W.
SPECIAL VARIABLE CAPACITOR FOR MEASURING VERY SMALL CAPACITANCES. [1962] 24p. 18 refs.
Order from SLA $2.60 62-20385

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe] A. [Zentralblatt für Elektrotechnik] (West Germany) 1961, v. 82, no. 19, p. 605-609.

DESCRIPTORS: *Capacitance, Measurement, Measuring devices (Electrical and Electronic), *Variable capacitors, Design, Construction

This paper describes a narrow range, variable capacitance air capacitor operated by a slow motion vernier drive mechanisms. These features permit measuring very small capacitances by the direct substitution method. The outstanding features of the present design is the use of a floating rotor. Various disadvantages of earlier designs have been eliminated. In its present state of development, this capacitor measures capacitance up to 0.1pF with an uncertainty of less than 0.1%. (Author)

Zakharova, N. V.
MUNICIPAL CABLES WITH ALUMINUM STRANDS AND ALUMINUM SHEATHING. 17 Feb 60 [6]p. [US]ASIA SC-104e/59.
Order from OTS or SLA $1.10 62-32789

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 9[234] p. 9-10.

DESCRIPTORS: *Telephone lines, Field wire, *Electric cables, *Aluminum wire, Electric insulation, Urban areas.

Technical data and a description of the methods for laying and installing telephone cable TAAB having aluminum strands and aluminum sheathing are given. (Author)

Zinchenko, N. S.
AN ION SOURCE WHICH GENERATES IONS THROUGH IMPACT IONIZATION OF GAS MOLECULES. 15 Jan 63 [6]p. FTD-TT-62-758.
Order from OTS $0.50 63-11591

Unedited rough draft trans. of Russian patent 140,918 (670,444/26) 20 June 60.

DESCRIPTORS: *Ion sources, Molecules, Ionization, *Ion beams, Focusing, *Electron beams, Electron guns, Electrodes, Vacuum systems, Gas ionization.

An intense ion beam, focused by an electron beam, may be obtained in a high vacuum without a magnetic field while permitting the necessary separation of ion and electron beams. The ion collector, which is at negative potential, is located behind the electron collector, which also acts as an electrode to draw off the ions and has a central aperture.

Mechanical Engineering

RATCHET MECHANISM, tr. by F. H. B. 29 Oct 62, 3p.
Order from OTS or SLA $1.10 63-13014

Trans. of Russian author's certificate 116,114, pub. 22 Nov 58.

DESCRIPTORS: *Drives, Design, Detents.

USSR INDUSTRIAL DEVELOPMENT: SOVIET POWER MACHINERY NO. 11. 25 Apr 63, 8p. JPRS: 18917.
Order from OTS $0.50 63-21687

Trans. of Energetik (USSR) 1963, [v. 11] no. 2, p. 39-40; and from Pravda, Moscow (USSR) 1962, 21 Dec, p. 3; 1963, 5 Jan, p. 1.

DESCRIPTORS: *Industrial production, *Power equipment, *Machines, *Steam turbines, Electric power production, *Turbines, Hydroelectric power systems, *Boilers, Specifications.

Contents:
Giant turbines, by L. Shubenko-Shubin
The largest turbine in the world
Thermotechnics (continuation of a chart describing boilers).

Ordnance, Missiles, and Satellite Vehicles

FITTINGS FOR USE ON ARMOR, tr. by F. H. B. 30 Jan 63, 8p. (figs. omitted).
Order from OTS or SLA $1.10 63-15445

Trans. of French patent 1,103,549, gr. 11, cl. 3, by Paul Largeot et Compagnie de Fives-Lille pour Constructions Mecaniques & Entreprises, appl. 21 Apr 54, granted 25 May 55, pub. 3 Nov 55.

DESCRIPTORS: *Armor, *Armored vehicles, Fittings, Shaped charges, Projectiles

The invention relates to a device for use on armor for protection against projectiles, especially hollow charge projectiles, characterized by a multiplicity of projections arranged so as to prevent the projectile from striking directly the vehicle or the like to be presented. (Author)

FOUR DAYS IN SPACE, tr. by George N. Kasachkoff. 4 Feb 63, 23p. AMC(Redstone) Trans. Nr. 2-63.
Order from OTS or SLA $2.60 63-15578

Trans. from Pravda [Moscow] (USSR) 1962, 8 Sep.

DESCRIPTORS: *Astronauts, *Space flight, *Manned spacecraft, Satellites (Artificial).

Al'pert, Ya. L., Belyanskii, V. B. and others.
RADIO INVESTIGATIONS OF THE STRUCTURE OF THE IONOSPHERE BY MEANS OF KOSMOS ARTIFICIAL EARTH SATELLITES AT COHERENT FREQUENCIES (PRELIMINARY RESULTS) [AND] A COHERENT RADIO RECEIVER FOR RECORDING THE DIFFERENCE IN THE DOPPLER SHIFT IN THE FREQUENCY OF RADIO WAVES TRANSMITTED FROM ARTIFICIAL EARTH SATELLITES. 7 May 63, 50p. 7 refs. JPRS: 19069.
Order from OTS $1.50 63-21757

Trans. of Geomagnetizm i Aeronomiya (USSR) 1963, v. 3, no. 1, p. 10-24 and 157-170.

DESCRIPTORS: *Ionosphere, Electron density, Measurement, *Satellites (Artificial), Radio transmission, *Doppler effect, *Atmospheric refraction, Radio-frequency spectroscopy, *Radio recievers, Radio waves, Recording systems, *Frequency multipliers, Phase measurement, Antennas.

Results of a preliminary analysis of measurements of differences in the Doppler shift in frequencies $\delta\Phi$ of coherent radio waves transmitted from the artificial earth satellites Kosmos I and Kosmos II at frequencies of 20.005 and 90.0225 megacycles per second are presented. (Radio ...) A brief description is given of a multichannel radio receiver for recording the difference in the Doppler shift in frequencies (phase difference) of coherent radio waves transmitted from a radio station installed in artificial earth satellites. Results from tests of the apparatus under real conditions showed that its sensitivity and achievable accuracy of records permit the conduct of delicate and detailed investigations of different parameters of the ionosphere and the interplanetary medium in the immediate vicinity of the earth. (A Coherent ...)

Beletskii, V. V. and Zonov, Yu. V.
ROTATION AND ORIENTATION OF SOVIET SPUTNIK III [Vrashchenie i Orientatsiya Tret'ego Sovetskogo Sputnika] tr. by Astrid Werner. Mar 63 [11]p. 7 refs.
Available from AIAA in Its Journal, v. 1, no. 3, $5.00.

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 7, p. 32-55.
Another trans. is available from OTS or SLA $3.60 as 62-24477, FTD-TT-62-522, RAE Trans-984, Jan 62 [32]p.

DESCRIPTORS: *Satellite vehicles, *Rotation, Magnetometers, Manometers, Flight instruments, Motion, Earth, Magnetic fields, Sun, Perturbation theory, Computers, Programming, Satellite vehicle trajectories, Euler's angle, Trigonometry.

For abstract see Technical Translation 8: 471, 1962.

Broberg, K. B.
EFFECT OF CONTACT DETONATION OF GRANITE SLABS (Sprangamnes Verkan vid Kontaktdetonation mot Granitplattor). [1962] [52]p. 8 refs.
Order from OTS or SLA $5.60 AEC-tr-5026

Trans. of K. Fortifikatsionsforvaltningen, Forskningsektionen, Stockholm (Sweden). Rapport-109:15, Aug 60.

DESCRIPTORS: *Granite, Rock (Geology), *Explosion effects, TNT, Charges (Explosive), Detonation, *Cratering, Mechanical waves, Shock waves, Propagation.

This report discusses theories and basic experiments on cratering, shock waves, and scabbing, without particular connection with rock cavities.

Egorova, A. V.
MOTION OF AN ARTIFICIAL EARTH SATELLITE UNDER THE INFLUENCE OF THE SUN AND MOON [Vliyanie Prityazheniya Luny i Solntsa na Dvizhenie Iskusstvennogo Sputnika Zemli] tr. by Ernst Volgenau. Feb 63 [5]p. 3 refs.
Available from AIAA in Its Journal, v. 1, no. 2, $5.00.

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 8, p. 46-56.
Another trans. is available from OTS or SLA $1.60 as 63-13735, RAE Trans-983, Jan 62 [19]p.

DESCRIPTORS: *Satellite vehicles, Motion, Sun, Moon, *Gravity, Perturbation theory, Equations of motion, Orbital trajectories, Elliptical orbit trajectories, *Celestial mechanics.

For abstract see Technical Translations 9: 624, 1963.

Gorchyakov, E. V.
DISPOSITION OF THE INNER RADIATION BELT AND MAGNETIC FIELD OF THE EARTH, tr. by Andre L. Brichant. Feb 63 [2]p. 4 refs.
Available from AIAA in Its Journal, v. 1, no. 2, $5.00.

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 62-65.
Another trans. is available from STS $5.80 as STS-G6220, 1961, 4p.

DESCRIPTORS: *Earth, *Magnetic fields, *Satellite vehicles, *Atmosphere, Satellite vehicle research, *Terrestrial magnetism, Charged particles

Shklovskii, I. S. and Shcheglov, P. V.
OPTICAL OBSERVATIONS OF ARTIFICIAL EARTH SATELLITES. [1963] [15]p. 9 refs.
Order from OTS or SLA $1.60 63-14495

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1958, v. 64, no. 3, p. 417-424.
Other translations are available from SLA as R-4454, 12p. and from NRCC as NRCC C-2728.

DESCRIPTORS: *Satellites (Artificial), Earth, *Optical tracking, *Position finding, Orbital trajectories, Tracking telescopes, *High speed photography, Photographic plates.

Sanitation and Safety Engineering

HYGIENE AND SAFETY: [SELECTED] TRANSLATIONS. 6 May 63, 11p. 7 refs. JPRS: 19068.
Order from OTS $0.50 63-21756

Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1963 [v. 7] no. 2, p. 24-29 and 62-63.

DESCRIPTORS: *Safety, *Public health, Industrial psychology, *Ultrahigh frequency, *Electromagnetic waves, Merchant vessels, High frequency, *Electric currents, *Radiation effects, Scientific personnel.

Contents:
Ultra-high-frequency electromagnetic waves on the decks of merchant ships, by E. L. Kulikovskaya
Hygienic evaluation of working conditions in work with high-frequency currents, by L. T. Frolova
Kurlyandskaya, Ettel' Borisovna.

HYGIENE AND SANITATION, 1962 [VOL. 27] NO. 12: [SELECTED] TRANSLATIONS. 6 May 63, 17p. 8 refs. JPRS: 19067.
Order from OTS $0.50 63-21755

Trans. of Gigiena i Sanitariya (USSR) 1962 [v. 27] no. 12, p. 7-12 and 89-93.

DESCRIPTORS: *Public health, *Safety, *Fluorine, Water, *Nervous system, Brain, Spinal cord, Lakes, *Monomolecular films, Ionization, Antennas, Aerosols, Biochemistry.

Contents:
The effect of small concentrations of fluorine on the organism, by A. F. Aksyuk and G. V. Bulychev
The effect of fluorine in drinking water on the functioning of the central nervous system, by R. D. Gabovich
Some sanitary indices for water reservoirs covered with a monomolecular film, by D. N. Kalyuzhnii and V. N. Chekal'
Air ionization of large premises by means of wire aerials connected to a franklinization unit, by Kh. F. Tammet and Ya. I. Sal'm.

Dam, J. W.
BE WARNED WHEN USING MAGNESIUM PERCHLORATE AS A DRYING AGENT (Waarschuwing Bij het Gebruik van Magnesium Perchloraat als Droogmiddel). [1962] [3]p. 3 refs.
Order from SLA $1.10 62-18700

Trans. from Chem[isch] Weekblad (Netherlands) 1958, v. 54 [no. 21] p. 277.

DESCRIPTORS: *Magnesium compounds, *Perchlorates, *Dessicants, Safety, Explosions, Explosive gases, Hazards.

Friedel, F. A.
TREATMENT OF WATER WITH MAGNETIC FIELDS. [22 Oct 62] 7p. (2 figs. omitted) 10 refs.
Order from SLA $1.10 63-10290

Trans. of Chemiker Zeitung (West Germany) 1960, v. 84 [no. 16] p. 539-540.
Another trans. is available from SLA $1.10 as 62-10675 [1961] 5p.

DESCRIPTORS: *Water softeners, *Magnetic fields, *Pipes, Scale, *Corrosion inhibition, Industrial equipment.

Guthmann, K.
MEASURING THE DUST CONTENT IN INDUSTRIAL GASES AND IN THE AIR - MEASUREMENTS OF DUST ON THE GROUND. [1961] [33]p. 43 refs.
Order from SLA $3.60 62-14364

Trans. of Stahl und Eisen (West Germany) 1959 [v. 79, no. 16] p. 1129-1141.

DESCRIPTORS: Measurement, *Dusts, Air, *Waste gases, Industrial equipment, Design, Meters, Purification, Public health, Particles.

The most important dust measuring instruments for investigating the problem of air purification and for its control are described. Reports on years of experience of dust content measurements in industrial gases and in the atmosphere and of determination of particle number in gases or air as well as on new experiences with dust deposit measuring instruments. (Author)

Niemitz, W. and Pestlin, W.
THE INFLUENCE OF BIOLOGICAL SEWAGE TREATMENT ON DETERGENTS' TOXICITY TO FISH. [1963] 4p.
Order from ATS $6.00 ATS-49Q68G

Trans. from Städtehygiene (West Germany) 1962, no. 11.

DESCRIPTORS: *Sewage, *Sanitary engineering, *Fishes, *Toxicity, Cleaning compounds.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Calle Velez, H.
COFFEE OILS. [1963] 7p.
Order from ATS $12.00 ATS-52Q67SP

Trans. of Cenicafé (Colombia) 1960, v. 11, p. 251-258.

DESCRIPTORS: *Coffee, *Oils.

Golutvina, M. M., Kazakova, T. A., and Nikolaev, Yu. M.
A RAPID METHOD FOR DETERMINING THE STRONTIUM-90 CONTENT OF MILK. 9 Apr 63 [10]p. 8 refs. JPRS: 18632.
Order from OTS $0.50 63-21550

Trans. of Voprosy Pitaniya (USSR) 1963, v. 22, no. 1, p. 66-69.

DESCRIPTORS: *Strontium, *Milk, Phosphates, Yttrium, Material separation, Chemical analysis, Radioactive isotopes.

This paper carries a description of a rapid extraction method for determining Sr^{90} content in milk. The procedure is based on the extraction of Y^{90}, which is in equilibrium with Sr^{90} in milk, by means of tributyliphosphate, with subsequent re-extraction of yttrium into water and measurement of its radioactivity on a low background unit. The proposed method may be employed for the purpose of administrative control and check-up. (Author)

Ienistea, C.
USE OF ANTIBIOTICS IN THE CONSERVATION OF FOOD PRODUCTS. [1962] 13p.
Order from SLA $1.60 63-10625

Trans. in manuscript of Igiena (Rumania) 1961, v. 10 [no. 1] p. 57-62.

DESCRIPTORS: *Antibiotics, *Food, *Preservation, Enzymes, Toxicity, Bacterial toxins, Fungi, Proteins, Meat, Milk, Storage.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
FOOD PRESERVATION BY IRRADIATION. Apr 63, 8p. 45 refs. OTS Selective Bibliography SB-403, suppl. 1.
Order from OTS $0.10 OTS SB-403 Suppl. 1

DESCRIPTORS: *Bibliographies, *Food, *Preservation, *Radiation effects, Pasteurization, Disinfectants, Storage.

Lists 45 domestic and foreign references added to the OTS collection from June 1962 through April 1963. Cites references to information on sterilization, pasteurization, wholesomeness, containers and packaging, storage life, and food irradiation facilities. Included are facts on modifications of flavor, color, odor, and texture.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

IMPROVEMENTS IN FASTENING CRIMP-ON OR SIMILAR DEVICES TO A CABLE, tr. by F. H. B. 18 Dec 62, 9p. (figs. omitted).
Order from OTS or SLA $1.10 63-13747

Trans. of French patent 1,033,433, gr. 5, cl. 3, by Société Générale d'Equipements pour l'Automobile, la Locomotion Aérienne et Toutes Applications Spéciales de l'Électrité (Société Anonyme) appl. 5 Mar 51, granted 1 Apr 53, pub. 10 July 53.

DESCRIPTORS: *Electric cables, *Cables (Mechanical), *Crimping tools, Fastenings, Splicing tools.

The invention relates to a method of fastening a cable to a strip joined to a crimp-on or similar element, consisting in inserting the cable between the ends of the U-shaped strip and folding the ends of the strip on the (Machinery, Fabrications and Accessory Equipment, cable, guiding them in such a way that said ends rejoin and penetrate the mass of the wires which form the cable. (Author)

PACKING OF ABSOLUTELY GYRATING PARTS OF HIGH RPM MACHINES. 15 Apr [63] [6]p. FTD-TT-62-1895.
Order from OTS or SLA $1.10 63-19406

Unedited rough draft trans. of Polish patent 42081, cl. 14c, 20/01, 6 Aug 59.

DESCRIPTORS: Bodies of revolution, *Machines, Compressors, Rotation, Shafts, Disks, *Seals (Stoppers).

The object of the invention is absolute sealing by a liquid, in which the phenomenon of wedge formation with the liquid is utilized. On the shaft of the machine are fitted slip rings cooperating with stationary rings mounted on the body of the machine, whereby, to the area situated between rotating and stationary disks, is applied the sealing liquid e.g. oil, which separates from the surroundings the area filled with the agent with a certain overpressure during the rotation of machine shaft, because a rise in fluid pressure is created, just as in disk type support bearings, which produces the phenomenon of creating a wedge from the liquid. (Author)

USSR INDUSTRIAL DEVELOPMENT: SOVIET METAL-WORKING EQUIPMENT NO. 49. 16 Apr 63 [21]p. JPRS: 18722.
Order from OTS $0.50 63-21582

Trans. of Promyshlennost' Armenii (USSR) 1963 [v. 6, no. 1] p. 70-72; Nauchno-Tekhnicheskoe Obshchestva SSSR, 1963 [v. 5, no. 1] p. 25; Mashinostroitel' (USSR) 1963 [no. 1] p. 18; [no. 2] p. 17 (excerpts); Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 1, p. 28-37 (excerpts); and from Ekonomicheskaya Gazeta (USSR) 1962, no. 50[71] 8 Dec, p. 43; 1963, no. 7(80) 16 Feb, p. 17, 48; Leninskaya Smena (USSR) 1963, 15 Jan.

DESCRIPTORS: *Industrial equipment, Metals, Processing, Automatic, Lathes, Conferences, Machine tools, Piston rings, Cutting tools, Grinders, Hydraulic presses, Milling machines, Dies, Machining.

Contents:
We must create an assortment of automatic lathes, by V. Kochetkov
At the meeting of the Scientific-Technological Council of ENIMS
Delivery of poor-quality machine tools from the Eisk plant
Piston rings from steel strips
At a specialized cutting-tool plant
Saratov builds a new gear-lapping machine
Eight-spindle automatic lathe, by V. M. Mednikov
Semiautomatic profile-cutter grinding machine, by A. Kotov and A. Lerner
Hydraulic straightening presses P957 and P6039 with a force of 800 tons, by N. I. Naiguz
Gear-milling master-machine model 543, by N. S. Burgomistrov
Plano-milling machine, model 6,61 OFR with cutter-and-boring heads, by L. N. Stel'man
Contouring milling machine, model LF-23 for machining dies, by G. A. Monakhov and I. A. Sukhov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET METAL-WORKING EQUIPMENT NO. 50. 22 Apr 63, 17p. (fig. omitted). JPRS: 18806.
Order from OTS $0.50 63-21621

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 2, p. 35-40, 44-46; and from Ekonomicheskaya Gazeta (USSR) 1963 [no. 1(74)] 5 Jan, p. (?) p. 42; Leninskoe Znamya (USSR) 1963, 25 Jan, p. 1; Vechernaya Moskva (USSR) 1963, 11 Jan, p. 1; Pravda, Moscow (USSR) 1963, 27 Jan, p. 2; Sovetskaya Litva (Lithuanian USSR) 1963, 30 Jan.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Metal forming presses, *Forge presses, *Machine tools, *Powder metallurgy, Iron, Rolling mills, Automation, Scheduling, Milling machines, Precision,equipment, Drilling machines, Machining

Contents:
Automatic presses in powder metallurgy, by V. Nikolaev
Difficulties of Kolomna heavy machine tool buildings plant, by I. Shakhray
Screw rolled iron
Things that worry machine tool builders
A giant press
High precision machine tool
Automatic line, model 1L120, by D. P. Kol'chinskii
The range of special drilling and boring machine tools for machining of deep performations, by V. I. Lopukhin
Milling machine tool with program control, model 2GF-730, by P. I. Zhdankin
Automatic machine tool for finishing and toughening machining of shaft-type parts, by G. M. Asarevich and G. Sh. Bershtein

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 51. 26 Apr 63, 17p. JPRS: 18935.
Order from OTS $0.50 63-21694

Trans. from Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 2, p. 26 and Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1963 [v. 17] no. 3, p. 1-5, 19-22.

DESCRIPTORS: *Industrial production, Industrial equipment, *Machine tools, *Cutting tools, Oxygen, Automation, Metal forming presses, Forge presses, Machines, Construction

Contents:
New machines for oxygen cutting
New automatic production lines and machine tools at the All-Union Exhibition of Achievements of the National Economy, by M. L. Lesnitskii
Press and forge industry program control, by V. I. Davydov

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 52. 7 May 63, 13p. JPRS: 19082.
Order from OTS $0.50 63-21769

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 1, p. 26-28; and #Stanki i Instrument (USSR) 1963 [v. 34] no. 3, p. 1-3.

DESCRIPTORS: *Industrial production, *Metal forming presses, Mechanical working, *Explosive forming, Dies, Machines, Construction, Automation, *Machine tools, *Industrial equipment

Contents:
Explosion stamping, by G. N. Afanas'ev
Production of automatic lines to be speeded up in every way

Balovnev, V. I.
METHOD OF DETERMINING THE BASIC PARAMETERS OF A BULLDOZER BLADE (Metodika Opredeleniya Osnovnykh Parametrov Otvala Bul'dozerov (v Poryadke Obsuzhdeniya)). [1962] [21]p (foreign text included) 1 ref.
Order from OTS or SLA $2.60 62-18744

Trans. of Stroitel'nye i Dorozhnye Mashiny (USSR) 1960 [v. 5] no. 1, p. 20-25.

DESCRIPTORS: Determination, *Bulldozers, Resistance, Soils, Earth handling equipment, Mathematical analysis, Earth augers, *Cutting tools.

Pritykin, D. P. [and Drimbo, A. V.].
MEANS OF ELIMINATING STOPPAGES IN SINTER PLANTS (SUMMARY) tr. by R. Sewell. Aug 59 [7]p [BISI] Trans. 1416; T[rans.] no. 5123; [DSIR] NLL M.4743.
Order from OTS or SLA $1.10 62-24238

Partial trans. of Stal' (USSR) 1958 [v. 18, no. 3] p. 202-205.

DESCRIPTORS: *Sintering, Industrial plants, Machinery, Design, Construction, Seals (Stoppers).

For abstract see Technical Translations 2: 586, 1959.

Shkurenko, N. S.
EXPERIMENTAL DATA ON THE EFFECT OF OSCILLATION ON THE CUTTING RESISTANCE OF SOIL (Eksperimental'nye Dannye o Vliyanii Vibratsii na Soprotivlenie Gruntov Rezaniyu). [1962] [30]p. (foreign text included) 4 refs.
Order from OTS or SLA $2.60 62-18745

Trans. of Akademiya Stroitel'stva i Arkhitektury SSSR. Institut Osnovanii i Podzemnykh Sooruzhenii. Trudy, 1958, v. 32, p. 93-103.

DESCRIPTORS: *Oscillation, *Soils, *Cutting tools, Resistance, Vibration, Velocity.

The apparatus comprised essentially a 3-wheeled carriage with an electric motor and vibrator, capable of imparting vertical or horizontal oscillation at the rate of 600-3300 c/min. The moment of the eccentrics could be varied in steps of 25 kg cm to a maximum of 150 kg cm. The cutting force was recorded with a dynamometer, the forward speed being fixed by time marks; the records were analysed with the aid of a planimeter. (Author)

Engines and Propulsion Systems

ROCKET MOTOR, tr. by L. A. N. 17 Oct 62, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-13009

Trans. of Netherlands patent 74,261, cl. 46g. 1 b 1, by Aktiebolaget Bofors, Sweden, appl. 31 May 50, laid open to public inspection 15 Oct 53, pat. granted 16 Feb 54, pub. 15 Mar 54 (priority: Sweden, from 16 July 49).

DESCRIPTORS: *Rocket motors, Exhaust nozzles, Nozzle clusters, Design.

The invention relates to a rocket motor comprizing a number of exhaust nozzles arranged in a circle about the motor axis, and a number of fuel chambers arranged in a circle about the motor axis, wherein fuel combustion takes place, characterized in that the fuel chambers open into a common pressure equalizing chamber, connected with the exhaust nozzles. The exhaust chamber is constructed as a reinforcing element for the missile case. (Author)

STABILIZATION OF A FLAME AND THE DEVELOPMENT OF THE COMBUSTION PROCESS IN TURBULENT FLOW: SELECTED PARTS. 12 Apr 63 [144]p. FTD-TT-62-768.
Order from OTS or SLA $11.00 63-19403

Unedited rough draft trans. of mono. Stabilizatsiya Plameni i Razvitie Protessa Sgoraniya v Turbulentnom Potoke, Moscow, 1961, p. 31-148.

DESCRIPTORS: *Flames, Stabilization, Turbulence, *Combustion, *Flame propagation, *Fuels, Gasoline, *Stabilization systems, Ramjet engines, *Combustion chambers, Design.

Contents:
Influence of turbulence parameters on the velocity of flame propagation, by G. M. Gorbunov
Investigation of propagation and stabilization of a flame behind a trough-shaped stabilizer, by E. L. Solokhin
Influence of the turbulence parameters on the combustion of a homogeneous gasoline-air mixture behind a stabilizer under conditions of a closed stream, by V. P. Solntsev
Combustion of gasoline-air mixture behind stabilizer systems, by V. P. Solntsev and V. A. Golubev
On the design of the simplest combustion chamber of the ramjet type, by K. P. Vlasov.

Artamonov, K. I.
STABILITY OF LIQUID FUEL ROCKET ENGINE OPERATION [Ustoichivost' Raboty Zhidkostnogo Raketnogo Dvigatelya] tr. by Andre L. Brichant. Jan 63 [4]p.
Available from AIAA in Its Journal, v. 1, no. 1, $5.00.

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 1, p. 64-69.
Another trans. is available from OTS $0.50 as 61-21637, JPRS-9170, 1 May 61, 11p.

DESCRIPTORS: *Rocket motors, Operation, Stability, Rocket fuels, Liquid rocket propellants.

Balliano, Luigi.
IMPROVEMENTS IN AIRCRAFT PROPULSION SYSTEMS, tr. by P. C. C. 28 Sep 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13008

Trans. of Italian patent 492,286, cl. 8, by FIAT, S. A., appl. 16 Sep 52, granted 22 Mar 54, printed May 56.

DESCRIPTORS: *Aircraft, *Propulsion, Propellers (Aerial), Propeller blades, Compressors, Airplane engines.

The invention involves a propulsion system comprising a propeller, especially for aircraft, characterized in that said system comprises power plants in the form of reactors mounted on one or more blades of the propeller, and one or more compressors driven by the propeller, said compressors being adapted to supply said reactors with combustion air through ducts provided in the propeller blades. (Author)

Hryniszak, Waldemar.
THE PRESENT STATE OF GAS TURBINE DEVELOPMENT (Derzeitiger Stand der Gasturbinenentwicklung). [1962] [90]p. (foreign text included) 59 refs.
Order from SLA $8.10 62-18742

Trans. of MTZ [Motortechnische Zeitschrift] (West Germany) 1956, v. 17, no. 1, p. 16-23; no. 2, p. 53-58; no. 3, p. 82-90.

DESCRIPTORS: *Gas turbines, Design, *Fuels, Coal, Fuel oil, Natural gas, Petroleum, Fuel consumption, Combustion chambers, Exhaust gases, Industrial plants, Power supplies, *Gas generator engines, *Airplane engines, *Marine engines, *Locomotives, *Passenger vehicles, Propulsion, *Turbine parts, Bibliography

Riess, W. and Fischer, P.
ANALOGY INVESTIGATIONS OF AIR COOLING OF DISK ROTORS FOR GAS TURBINES. [1962] [23]p. 4 refs.
Order from SLA $2.60 62-20261

Trans. of Konstruktion (West Germany) 1962, v. 14, no. 6, p. 234-239.

DESCRIPTORS: Gas turbines, Turbine parts, *Gas turbine rotors, Air cooled, Temperature, Distribution, Determination, *Analog systems.

The temperature distribution in an air-cooled disk rotor is determined for a larger number of cases as a function of the essential parameters by means of an electrical analogy method. Results are generalized such that they can be applied for a calculation of cooling of geometrically similar disks independent of the exact shape of the blade. (Author)

Scherenberg, H.
25 YEARS OF GERMAN GASOLINE INJECTION IN RETROSPECT. [1962] [37]p.
Order from SLA $3.60 62-18797

Trans. of MTZ [Motortechnische Zeitschrift] (West Germany) 1955, v. 16 [no. 9] p. 245-254.

DESCRIPTORS: *Fuel injectors, *Internal combustion engines, Vehicles, *Airplane engines, Fuel consumption, Fuel pumps, Valves, Nozzles, Control.

Schreiber, H. R. W.
ADDITION OF WATER IN INTERNAL-COMBUSTION ENGINES. 18 Jan 38, 4p.
Order from SLA $1.10 63-10459

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1933, v. 32, p. 32-33.

DESCRIPTORS: *Internal combustion engines, *Water injection, Combustion, Tests.

Semenov, V. S.
ROTATION OF A PISTON RING IN ITS GROOVE, tr. by A. J. Greening. [1961] [8]p. 3 refs. MIRA Trans. no. 4/61; [DSIR NLL] M. 4677.
Order from OTS or SLA $1.10 62-19132

Trans. of Avtom[obil'naya] Prom[yshlennost'] (USSR) 1960, no. 10, p. 13-14.

DESCRIPTORS: Engine structures, *Engine cylinders, *Piston rings, Rotation, Velocity, Crankshafts.

Piston-ring rotation in the ring groove is explained by the presence of a skew on the crankpin relative to the crankshaft axis. The greater the skew the higher the ring, angular velocity. The ring angular velocity for each engine is directly proportional to the angular velocity of the crankshaft. Piston-ring rotation does not depend on the type of ring gap or on the gas pressure in the cylinder. On two-stroke engines, piston-ring turning is accomplished in the region of the ports where the ring breaks away from the lower, seating surface. The angular velocity of ring rotation in two-stroke engines is considerably lower than in four-stroke types under identical conditions. (Author)

Thomas, H. -J.
THE GAS TURBINE AS REFLECTED IN LATEST PUBLICATIONS: APPLICATIONS OF THE GAS TURBINE [Die Gasturbine im Spiegel neurer Veröffentlichungen: Anwendungen Jer Gasturbine]. [1962] [27]p. (figs. refs. omitted) 8 refs.
Order from SLA $2.60 62-18785

Trans. of Konstruktion (West Germany) 1955, v. 7 (no. 4) p. 157-163

DESCRIPTORS: *Gas turbines, Reports, Design, Industrial plants, Power supplies, *Marine engines, *Locomotives, *Passenger vehicles, Propulsion, Turbine parts, Fuels

Vanni, Pier Giorgio.
HYDRAULIC GOVERNOR FOR INTERNAL COMBUSTION ENGINES, tr. by L. A. N. 1 Oct 62, 12p. (figs. omitted).
Order from OTS or SLA $1.60 63-13013

Trans. of Swiss patent 272,061, cl. 104 b, appl. 6 Nov 48, granted 30 Nov 50, pub. 16 Feb 51.

DESCRIPTORS: *Internal combustion engines, *Speed regulators, Hydraulic systems.

The object of the invention is a hydraulic governor for internal combustion engines, characterized in that a throttling device is provided in a hydraulic circuit wherein a liquid flow is circulated by means of a pump driven by the engine to be regulated, at a speed proportional to its number of revolutions. This device varies the pressure at which said flow acts on a piston which controls the fuel-metering rod by overcoming the action of a spring; said device operates through the action of the liquid flow and is composed of at least one piston moved by the pressure of said flow, and of a discharge valve biased by an antagonistic spring and coupled with said piston. The latter is also provided with an opening traversed by said flow and wherein a throttling needle penetrates in order to effect a variation of the cross section of said opening as said piston moves. (Author)

Weisz, A.
OSCILLATING SYSTEMS: ENGINE-OPERATING MACHINE. [1962] 6p. (figs. tables formulae omitted).
Order from SLA $1.10 63-10048

Trans. of Schweizer Arch[iv für Angewandte Wissenschaft und Technik] 1946 [v. 12, no. 3] p. 96-100.

DESCRIPTORS: *Internal combustion engines, Machines, Vibration, Flywheels, Special functions, Oscillation.

Machine Parts and Mechanisms

CUTOFF VALVE FOR PRESSURE FLUIDS, tr. by J. R. -P. 23 Oct 62, 7p. (figs. omitted).
Order from OTS or SLA $1.10 63-13001

Trans. of German patent 530,687, cl. 47g, gr. 22, by Società Anonima Franco Tosi and San Giorgio Società Anonima Industriale, Italy, pat. from 7 May 27, grant announced 16 July 31, pub. 31 July 31.

DESCRIPTORS: *Cut-off valves, Fluids, Pressure, Rotary valves, Water.

Luciano, Giulietti.
IMPROVEMENTS IN LUBRICANT-TIGHT ROLLING BEARINGS, tr. by J. B. 18 Jan 63, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-15452

Trans. of Italian patent 465,991, cl. Vb, by RIV Officine di Villar Perosa S. A., appl. 7 July 50, granted 8 Oct 51, printed Nov 52.

DESCRIPTORS: *Roller bearings, *Lubricants, Seals (Stoppers).

The invention relates to a lubricant-tight rolling bearing of the type provided on either side with a metallic screen and a rubber diaphragm whose outer edge is fixed in a radial groove of the outer ring while the inner edge slides on a chamfer of the inner ring, characterized in that said diaphragm is provided in the zone corresponding to the chamfer with one or more annular lips that bear on the surface of said chamfer sliding on the chamfer, forming a sealing member on the inner ring to prevent leakage of the lubricant from the inside and entry of dust and foreign material from the outside. (Author)

IMPROVEMENTS RELATING TO METHODS FOR OBTAINING METALLIC PLATINGS. [1962] 4p.
Order from OTS or SLA $1.10 63-10882

Trans. of Belgian patent of improvement 560,648, principal patent: 508,589, 21 Jan 52, cl. C 23 c, filed 7 Sep 57, granted 30 Sep 57, printed and pub. 22 Apr 60 (priority, Gt. Brit., 10 Sep 56) by Tainton Co., Baltimore, Md.

DESCRIPTORS: Metals, *Plating, Glass, Particles, Processing.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 39. 22 Apr 63, 25p.
JPRS: 18803.
Order from OTS $0.75 63-21619

Trans. of Mashinostroitel' (USSR) 1963, no. 2, p. 1; Akademiya Nauk Moldavskoi SSR, Kishinev. Izvestiya, 1962, no. 2, p. 13-22; and from Ekonomicheskaya Gazeta (USSR) 1963, no. 7(80) 16 Feb, p. 9, 11.

DESCRIPTORS: *Industrial production, *Machines, Construction, *Economics, Management engineering.

Contents:
The benefits of specialization in machine building
Problems of rational economic management in the Ukraine, by B. Tsomaya
The need for production specialization in the Tatar Republic, by M. Troitskii
Specialization in the machine building industry in Moldavia, by S. I. Kirka.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 69. 23 Apr 63, 50p.
JPRS: 18852.
Order from OTS $1.50 63-21649

Trans. from Pravda, Moscow (USSR) 1962, 3 Oct, p. 2; 3 Dec, p. 2; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 1, p. 37-41; Agitator (USSR) 1963, no. 1, p. 12; Izvestiya (USSR) 1962, 16 Dec, p. 4; Ekonomicheskaya Gazeta (USSR) 1962, no. 49(70) p. 5, 11, 38, 44; no. 50(71); no. 50(71) p. 40.

DESCRIPTORS: *Industrial production, *Precision equipment, Economics, Instrumentation, Nuclear industrial applications, Radioactive isotopes, Automation, Radiometers, Electron tubes, Television equipment, Industrial plants, Computers, Sewing machines, Dental equipment, Dental materials, Dentistry.

Contents:
Shortcomings of consumers goods production, by V. Ryasnoi
Effectiveness of introducing radioisotope instruments and means of automation in industry, by S. D. Panov
The L'vov gas appliances plant attains production levels set for 1965
Price increases of the Cheboksary electrical equipment plant, by I. Slutskii
Technical production problems of the L'vov electronic tube plant, by K. Balyavskii and others
Production at the L'vov television plant reaches the 1965 level
Production problems of the Ryazan' calculating and analytical machines plant, by E. Gertsev
Failure of the Khar'kov sewing machines plant to produce satisfactory sewing machines, by N. Gubenkov
Cost of television sets at the Baku radio plant
Production of dental instruments and materials planned for 1963
Overcautious planning of the operations of the Ust'-Kamenogorsk instruments plant, by G. Peskov

Deineko, V. G.
ROLLING THREADS WITH ROLLS OF DIFFERENT DIAMETERS. June 58 [7]p. GKN Trans-695; BISI Trans. no. 967; [DSIR] NLL M.4090.
Order from OTS or SLA $1.10 62-24105

Trans. of Stanki i Instrument (USSR) 1957 [v. 28] no. 7, p. 26-28.

DESCRIPTORS: *Rolling mills, *Threads, Design, Cold-working.

Medovar, B. I. and Gurevich, S. M.
OXYGEN-FREE FLUXES FOR WELDING HIGH-ALLOY STEELS AND ALLOYS. [1962] [12]p. 16 refs.
Order from OTS or SLA $1.60 62-14395

Trans. of Avtomaticheskaya Svarka (USSR) 1955, v. 8, no. 4, p. 31-41.

DESCRIPTORS: *Welding fluxes, Antioxidants, Welding, *Steel, Alloys.

Michalski, F. and Kemenesy, E.
COMPARISON OF A 50 C/S WITH A 5 C/S MAGNETIC STEEL SORTING DEVICE. Apr 63.
Order from BISI £2 15s BISI-3228

Trans. of Materialprüfung (West Germany) 1962, v. 4 [no. 12] p. 469-472.

DESCRIPTORS: Steel, Separation, *Electrical equipment, Magnetic properties, Hysteresis, Electric currents.

Morelle, Jean-Marie.
CONTRIBUTION TO THE STUDY OF OXYGEN CUTTING. [1962] [66]p. 21 refs.
Order from SLA $6.60 62-20193

Trans. of Riv[ista] Ital[iana della] Saldatura (Italy) 1955, v. 7, p. 55-67 and 115-134 (originally pub. in Revue de la Soudure-Lastijdschrift (Belgium) 1954 [v. 10] no. 2).

DESCRIPTORS: *Oxygen, *Cutting torches, Theory, Oxidation, Steel, Metal plates, Experimental data, Operation.

Nechaev, M. A.
GAS TURBINES AS DIRECT SOURCES OF BLAST FURNACE BLAST. Feb 58 [5]p. GKN Trans-622; BISI Trans. no. 862; [DSIR] NLL M. 4111.
Order from OTS or SLA $1.10 62-24118

Trans. of Stal' (USSR) 1957, v. 17, no. 12, p. 1140-1141.

DESCRIPTORS: *Gas turbines, Blast furnaces, Waste gases, Sources, Air blast, Oxygen, Carbon compounds, Dioxides, Heating, Compressors, Operation.

The main advantages of the scheme for providing blast furnaces with blast by using the waste gases from gas turbines are: (1) The high efficiency of compressing and heating the blast for blast furnaces; (2) the use of installations already tested out industrially; (3) the absence of any dubious elements, or any that require testing, in the scheme; and (4) the simplicity of the scheme, small sizes, and hence lower cost of the installation compared with other known schemes for providing blast for blast furnaces. (Author)

Rouff, J. R.
SAND AND SHOT BLASTING. Mar 63.
Order from BISI £5 BISI-3061

Trans. of Zinc, Cadmium, Alliages (France) 1961 [v. 7] Oct/Dec, p. 34-45.

DESCRIPTORS: *Sandblasting, *Abrasive blasting machines, *Cleaning, Abrasives, Corundum, Silicosis, Turbines, Surface properties.

Stradtmann, K. -D.
EFFECT OF THE SPIRAL WELD UPON THE BURSTING PRESSURE OF TUBES AS FUNCTION-OF TUBE SIZE AND MATERIAL. Apr 63.
Order from BISI £4 10s BISI-3109

Trans. of Bänder, Bleche, Rohre (West Germany) 1962 [no. 5] p. 228-237.

DESCRIPTORS: *Pipes, Welding, Stresses, Rupture, *Welds.

Unterberger, Michael.
DAMAGE TO TOOTH FACES AND THE LOAD CAPACITY OF ROLLING MILL GEARS. [1962] [13]p. 7 refs.
Order from SLA $1.60 62-14325

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 18, p. 1268-1273.
Another trans. is available from MT, Jan 60.

DESCRIPTORS: *Rolling mills, *Gears, Load distribution, Hazards.

Transport, Traction and Hoist Facilities

ENGLISH "HOVERCRAFT" FOR NAUTICAL PURPOSES TESTED. [1963] 2p.
Order from ATS $2.50 ATS-48Q67DU

Trans. of Nautica (Netherlands) 1962 [v. 4, no. 12] p. 633.

DESCRIPTORS: *Ground effect machines, Flying platforms, Water, Tests.

EXPERIMENTAL AIR-CUSHION CRAFT FOR THE SWEDISH NAVY: INTENDED FOR OPERATIONS ON LAND, ON WATER, AND ON ICE. [1963] 3p.
Order from ATS $3.25 ATS-49Q67DU

Trans. of Nautica (Netherlands) 1962 [v. 4, no. 12] p. 643.

DESCRIPTORS: *Ground effect machines, Flying platforms, Navy, Terrain, Water, Ice, Sweden.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 30. 9 Apr 63 [9]p. JPRS: 18608.
Order from OTS $0.50 63-21537

Trans. of Sotsialisticheskii Trud (USSR) 1962 [v. 7] no. 12, p. 79 (excerpt); Kommunist, Moscow (USSR) 1962 [v. 39] no. 18, p. 78 (excerpt); Referativnyi Zhurnal. Tekhnologiya Mashinostroeniya (USSR) 1963, no. 2, p. 64 and 197-198.

DESCRIPTORS: *Industrial production, *Automotive industry, Labor, *Plastics, Polymers, Vehicles, Vehicle chassis, Components, *Bearings, Nitrogen, Bonding, Roller bearings, Grinders, Mechanical properties.

Contents:
Revision of production norms at the Gor'kii motor vehicle plant
Autobodies made of plastic
Two machine-building technology abstracts.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 31. 29 Apr 63, 15p. JPRS: 18956.
Order from OTS $0.50 63-21707

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1963 [v. 29] no. 1, p. 6-7, 12-14.

DESCRIPTORS: *Industrial production, *Automotive industry, *Internal combustion engines, *Tractor engines, Life expectancy, Cargo vehicles, *Vehicle chassis components.

Contents:
Increasing the service life of engines, by N. I. Borisov
Research on the durability of the ZIL-130 vehicle cab, by D. B. Gel'fgat and others.

Balbachan, Ya. I.
FIRST LONG DISTANCE PIPELINE PROJECT. [1962] 6p. (figs. omitted). [Fuel Research Station Trans. NT675; [DSIR] NLL M.3602.
Order from OTS or SLA $1.10 62-25291

Trans. of Ugol (USSR) 1957 [v. 32] no. 8, p. 38-40.

DESCRIPTORS: *Coal, Transportation, Conveyors, Hydraulic systems, *Pipelines, Design, Operation.

Johannis, Eberhard.
FRONT-HEAVY TRACK-LAYING VEHICLES (Frontlastige Kettenfahrzeuge). [1962] [15]p. (foreign text included) 5 refs.
Order from SLA $1.60 62-18755

Trans. of ATZ [Automobiltechnische Zeitschrift] (Germany) 1959, v. 61, no. 5, p. 131-134.

DESCRIPTORS: *Tracked vehicles, *Load distribution, Gravity, Vehicle tracks, Vehicles, Bulldozers.

Front-heaviness of a track-laying vehicle has an adverse effect on the travelling characteristics and ease of steering; it requires greater expenditure on the track-laying mechanism.

Karetnikov, A. D., Ashukin, D. D. and others.
HOW TO ORGANIZE LOCAL OPERATION ON RAILROAD EXTENSIONS. [1962] 9p.
Order from OTS or SLA $1.10 63-10765

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 8] p. 55-59.

DESCRIPTORS: *Railroads, Management engineering, Operation, Maintenance.

Kasimov, A. F. and Gukasov, N. A.
ONE APPROXIMATE METHOD SOLVING THE PROBLEM OF THE CONSECUTIVE MOVEMENT OF TWO VISCOUS LIQUIDS. [1963] 5p.
Order from ATS $5.65 ATS-94Q67R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Nef' i Gaz (USSR) 1959, v. 2, no. 7, p. 103-106.

DESCRIPTORS: *Fluid flow, *Liquids, Viscosity.

Kharlamenko, V. I. and Yablonskii, V. S.
DISPLACEMENT OF CRUDE OILS AND OIL PRODUCTS IN PIPELINES WITH LAMINAR FLOW CONDITIONS. [1963] 9p.
Order from ATS $9.75 ATS-93Q67R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1962, v. 5, no. 6, p. 77-84.

DESCRIPTORS: *Oils, Petroleum, *Pipelines, Fluid dynamic properties, *Fluid flow.

Milewski, W.
THE STAR 66 CROSS COUNTRY TRUCK (Samochod Terenowy Star 66) tr. by H. W. [1960] [10]p. (6 photos. omitted). H-4317.
Order from OTS or SLA $1.10 60-21210

Trans. from Przeglad Samochodowy (Poland) 1959, May.

DESCRIPTORS: *Cargo vehicles, Towing vehicles, Design, Hoists, Specifications.

A general description and technical characteristics of the vehicle are given.

Myasnikov, Z. M.
IMPROVED OPERATIONS ON STEAMING-AND WASHING STATIONS. [1962] [9]p.
Order from OTS or SLA $1.10 63-10762

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 8] p. 44-49.

DESCRIPTORS: *Railroad cars, Tanks (Containers), Steam-cleaning, Cleaning, Oils, Chemicals, Railroads.

Potapov, V. P., Matalasov, S. F., and Malakhov, K. N.
NEW OPERATIONAL DEMANDS ON DESIGN OF FREIGHT CARS. [1962] 6p.
Order from OTS or SLA $1.10 63-10761

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 8] p. 28-32.

DESCRIPTORS: *Railroad cars, Design, Maintenance, Handling, Cargo, Railroads.

Zakirov, G. Z. and Yablonskii, V. S.
PROBLEMS ON THE THEORY OF MOVEMENT OF SEPARATING PLUGS IN THE CONSECUTIVE PIPELINING OF CRUDE OIL PRODUCTS. [1963] 6p.
Order from ATS $7.85 ATS-92Q67R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 3, p. 75-79

DESCRIPTORS: *Pipelines, Oils, Petroleum, *Plug valves.

MATERIALS

CEMENT AND NON-FERROUS METALS. [1961] 5p. 4 refs.
Order from SLA $1.10 61-20219

Trans. from Cementbulletin (Switzerland) [sic] 1948, no. 6.

DESCRIPTORS: *Cements, *Concrete, Metals, Alloys, *Corrosion inhibition, *Corrosion-resistant alloys

Topics include: The action of cement on light and heavy metals; metals and alloys not attacked by cement; practical experience; and, the protection of sensitive metals against corrosion.

Al'tshuler, M. A. and Spivak-Slonitskii, O. V.
A METHOD OF INVESTIGATING THE PORE STRUCTURE OF MATERIALS. [1963] 4p.
Order from ATS $7.00 ATS-85Q67R

Trans. of Soviet patent 145,797, filed 16 Nov 59, under 644,061/23.

DESCRIPTORS: *Materials, *Porosity, Test methods.

Koettnitz, J. P.
THE COKING OF PITCH. 17 Dec 31, 4p.
Order from SLA $1.10 53-10472

Trans. of Brennstoff Chemie (Germany) 1929, v. 10, p. 406-[408].

DESCRIPTORS: *Electrodes, Materials, *Pitch (Material), *Coke, Production.

Labeyrie, J.
VACUUM-TIGHT SEALING OF GLASS AND MICA. 21 June 50, 2p. (refs. omitted).
Order from SLA $1.10 62-20274

Trans. of Journal de Physique et le Radium (France) 1950, v. 11 [no. 1] p. 20.

DESCRIPTORS: *Glass, *Mica, *Vacuum seals, Adhesives.

Mica sections as thin as 0.01 mm may be sealed to glass by means of powdered enamel (G. 50 of the glass works of Bagneaux-sur-Loing) which melts at 550° C and whose softening point is at 354°C. The same enamel may be used for sealing of mica to metal having an expansion coefficient between 85 and 110. 10^{-7}. (Author)

Lullwitz, Gerhard.
CONSIDERATIONS ON THE PACKAGE-MATERIAL CONSUMPTION FOR VARIOUS PACKAGING FORMS. [1962] 4p.
Order from SLA $1.10 63-10526

Trans. of [die] N[eue] V[erpackung] (Germany) 1952 [v. 5] no. 4, p. 346-348.

DESCRIPTORS: *Packing materials, Consumption, *Containers, Geometric forms, Surface area.

Takahashi, T., Koda, T. and others.
X-RAY IRRADIATION CHARACTERISTIC OF ORGANIC INSULATORS. [1963] 7p.
Order from ATS $9.00 ATS-71Q67J

Trans. of Denshi Shashin (Japan) 1962, v. 4, no. 1, p. 23-26.

DESCRIPTORS: *Insulating materials, Organic materials, X-rays, Radiation effects.

Ceramics and Refractories

Fitzer, E. and Rubisch, O.
MOLYBDENUM DISILICIDE AS A HEATING ELEMENT MATERIAL. 2 Nov 62, 10p. (figs. refs. omitted).
Order from SLA $1.10 62-20380

Trans. of Elektrowärme (West Germany) 1958, v. 16, no. 5, p. 163-169.

DESCRIPTORS: *Heating elements, *Refractory materials, *Molybdenum compounds, *Silicides, Chemical properties, Corrosion, Phase transitions, Bubbles, Creep, Mechanical properties, Stresses, Grain structures (Metallurgy), Plasticity.

$MoSi_2$, a metallic-conducting refractory, has been known for over 50 years. Only recently, however, has it been applied as a promisingly successful material for heating elements which are resistant in air up to 1700°C. The physical and chemical foundations of this interesting new heating element material are outlined. (Author)

Reinhardt, G.
BEHAVIOUR OF FORSTERITE, MAGNESITE AND CHROME-MAGNESITE BRICKS UNDER REDUCING CONDITIONS AND WITH IRON-CONTAINING SLAG, PTS. 7-8, 10-11. Apr 63.
Order BISI £7 10s BISI-3231

Partial trans. of Tonindustrie-Zeitung (West Germany) 1959, v. 83, no. 18, p. 432-[441].

DESCRIPTORS: *Refractory materials, *Brick, *Magnesium compounds, Silicates, Carbonates, *Chromium, *Slags, *Iron, Carbon compounds, Monoxides, Methanes, Decomposition, Resistance, *Magnesite.

Vodop'yanov, K. A. and Karov, B. G.
THE EFFECT OF COMPOSITION, HEAT, AND ELECTROLYTIC TREATMENT ON THE DIELECTRIC PROPERTIES OF STEATITE CERAMICS. 25 Jan 63 [13]p. 12 refs. FTD-TT-62-1800. AD-298 214.
Order from OTS or SLA $1.60 63-19077

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1962, no. 3, p. 55-61.

DESCRIPTORS: *Talc, *Ceramic materials, Dielectric properties, Impurities, Heat, Electrolysis, Electrodes, Coatings, Silver, Copper.

Comparative characteristics of permittivity and loss angle of various steatite ceramic materials are given relative to heat and electrolytic treatment. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Agroskin, A. A.
THE INFLUENCE OF MOISTURE ON THE THERMAL AND ELECTRICAL PROPERTIES OF COAL. [1962] [20]p. 14 refs. BM Trans. no. 1845.
Order from OTS or SLA $1.60 62-33774

Trans. of Podzemnaya Gazifikatsiya Uglei (USSR) 1958, no. 3, p. 43-49.

DESCRIPTORS: *Coal, Moisture, *Thermal conductivity, Specific heat, *Resistance (Electrical), Dielectric properties, Shale.

The coefficent of thermal conductivity of coal rises sharply as moisture increases. In cases of high moisture content, the thermal conductivity variation curve flattens out. The coefficient of temperature conductivity of coal also increases considerably as the moisture content rises and, reaching a maximum value,

diminishes somewhat as the moisture content is further increased. The specific heat of coal increases linearly with the increase of coal moisture. The moisture content of brown coal and shale has a considerable effect on their electrical conductivity, the ion conductivity being sharply increased by moisture. The value of the dielectric constant of coal increases linearly as the moisture content of the coal increases. (Author)

Gobzhila, A. G.
INVESTIGATION OF NATURALLY OCCURRING EMULSIFYING AGENTS IN CRUDE OIL IN RELATION TO THE RATIONAL CHOICE OF DEMULSIFYING AGENTS FOR CRUDE OIL EMULSIONS. [1963] 10p.
Order from ATS $12.25 ATS-52Q68R

Trans. of #Kolloidn[yi] Zh[urnal] (USSR) 1962, v. 24, no. 6, p. 651-658.

DESCRIPTORS: *Colloids, *Oils, *Petroleum, Surface-active substances.

Il'yashenko, S. M.
EVAPORATION AND COMBUSTION OF A SINGLE-COMPONENT FUEL IN A CHAMBER OF A LIQUID ROCKET ENGINE, LRE. Jan 63 [5]p. 8 refs.
Available from AIAA in Its Journal, v. 1, no. 1, $5.00.

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1960, no. 4, p. 72-82. Also available from OTS or SLA $1.60 as 61-28501, MCL-1168, 28 Aug 61 [19]p.

DESCRIPTORS: *Rocket motors, Liquid rocket propellants, *Combustion chambers, *Rocket fuels, Fuels, Combustion, Evaporation, Theory, Physical properties, Propellants, *Drops.

For abstract see Technical Translations 6: 914, 1961.

Kanesaki, K. and Takenouchi, Y.
GUM FORMATION IN CATALYTICALLY CRACKED GASOLINE ON STORAGE. [1963] 13p.
Order from ATS $12.25 ATS-20Q68J

Trans. of Sekiyu Gakkai Shi (Japan) 1962, v. 5, no. 4, p. 238-242.

DESCRIPTORS: *Gasoline, Catalysis, Decomposition, Storage, *Colloids.

Moos, J.
LUBRICANTS AND LUBRICATION. [1963] 23p.
Order from ATS $29.85 ATS-06Q68G

Trans. of Ver[ein] Deut[scher] Ing[enieure]. Z[eitschrift] (West Germany) 1963, v. 105, no. 1, p. 29-39.

DESCRIPTORS: *Lubricants, *Lubrication.

Weclewska, Maria and Olpinski, Wojciech.
A STUDY ON THE INTERNAL SURFACE OF COALS BY THE DYE-ADSORPTION METHOD (Badania Powierzchni Wewnetrznej Wegli Metoda Adsorpcji Barwnikow) tr. by J. Burchart. [1962] [39]p. 29 refs. PL-480 Int.
Order from OTS $0.50 60-21371

Trans. of Glowny Instytut Gornictwa. [Komunikat] (Poland) 1953, ser. B, no. 136, p. 1-26.

DESCRIPTORS: Fuels, *Coal, Surface area, Determination, *Dyes, Chemical indicators, Methylene blue, Absorption.

The purpose of the present paper is to find the optimum conditions for determining the specific surface area of coal by the dye-adsorption method and to apply this method to the examination of various types of coal. (Author)

Zasov, I. A.
AUTOMOBILES THAT OPERATE ON PRODUCER GAS. [1962] 7p. (figs. omitted).
Order from OTS or SLA $1.10 63-10402

[Condensed] trans. of mono. Automobile; USSR Auto Manual, Moscow, 1942, chap. 9, p. 207-241.

DESCRIPTORS: *Passenger vehicles, *Fuels, *Gases, Sources, Charcoal, Wood, Gas-generating systems, Design.

Leather and Textiles

FATIGUE OF TIRE CORD FABRICS. [1962] 5p. 4 refs.
Order from SLA $1.10 63-10828

Trans. of Melliand Textilberichte (West Germany) 1960, v. 41, no. 7, p. 793.

DESCRIPTORS: Fatigue (Mechanics), *Fibers, *Textiles, *Tires, Vehicles, Tests, Fibers (Synthetic)

Frind, H.
PRODUCTION OF HIGH-TENACITY CELLULOSE FIBERS FROM CUPRAMMONIUM-CELLULOSE SOLUTION. 12 Sep 62 [21]p. 16 refs.
Order from SLA $2.60 63-10817

Trans. of Kolloid-Zeitschrift (West Germany) 1961 v. 179, no. 2, p. 110-116.

DESCRIPTORS: *Fibers (Synthetic), *Cellulose, Production, Physical properties, Solutions, *Gels, Calcium, Copper, Chlorine, Ammonium radicals.

Attempts have been made to produce high-tenacity cellulose fibers from cuprammonium cellulose solution. The effect of a series of coagulating baths on the technical cuprammonium spinning solution was investigated on a German model fiber. Here, a coagulating bath (Ca^{++}, Cu^{++}, Cl^{-}, NH_3) was found in

which the copper calcium-cellulose gel fiber was formed, which could be stretched to a high extent under strong solidification. Multifilament fibers with a single titer of 5 den. and dry/wet strength of 420/320 g./100 den., 10% elongation (Dry/wet) and 70% swelling values could be spun. The maximum values were at 550/450 g./den. dry or wet strength for an 8% elongation. The fiber cross section is round; the skin, not sharply defined, has a higher orientation. (Author)

Glazkovskii, Yu. V.
CONTROL OF THE CLEANLINESS OF SPINNERET HOLES BY MEANS OF THE EPIDIASCOPE. 18 June 62, 6p. 5 refs.
Order from OTS or SLA $1.10 63-10782

Trans. of Khimicheskie Volokna (USSR) 1960, no. 1, p. 50-51.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 61-15472, Courtaulds ML-3192, 10 Aug 60, 3p.

DESCRIPTORS: *Textiles, *Fibers, *Machines, *Cleaning, Cleaning compounds, *Ultrasonics, Textile industry, Control.

For abstract see Technical Translations 5: 694, 1961.

Katayama, A., Kuroki, N., and Konishi, K.
EFFECT OF UNIVALENT INORGANIC ANIONS ON THE DYEING OF VINYLON. [1963] 8p.
Order from ATS $13.75 ATS-34Q68J

Trans. of Sen-i Gakkaishi (Japan) 1962, v. 18, no. 4, p. 356-360.

DESCRIPTORS: Inorganic compounds, *Ions, *Dyes, Fibers (Synthetic), *Vinyl plastics.

Kitaigorodskii, A. I., Tsvankin, D. Ya., and Petrov, Yu. M.
LONG PERIODS IN ENANTH FIBRES. 19 Apr 62 [1]p. 2 refs. [Trans] T.1388; [DSIR] NLL M 8888.
Order from OTS or SLA $1.10 63-15206

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 9, p. 1428.
Another trans. is available from ATS $2.50 as ATS-16P59R [1962] 2p.

DESCRIPTORS: Fibers (Synthetic), *Polyamide plastics, *Crystal structure, X-ray diffraction analysis.

Kresse, Peter.
BLOCK-CONDENSATION OF POLYETHYLENE TEREPHTHALATE WITH POLYESTERS. [1962] 12p. (figs. omitted) 27 refs.
Order from SLA $1.60 62-20378

Trans. of Faserforschung und Textiltechnik (Germany) 1960, v. 11, no. 8, p. 353-359.

DESCRIPTORS: *Block polymers, *Polyethylene plastics, *Phthalates, *Polyester plastics, Condensation reactions, Dyes, Fibers (Synthetic).

The interchange reactions taking place in the melt between polyethylene terephthalate and various polyesters are examined and the factors determining their rate of reaction discussed. With shortened cocondensation times, block polyesters are prepared which may be spun into fibers having improved dyeing properties. Polyethylene hexahydroterephthalate is especially appropriate for the block component. (Author)

Margolin, I. S.
VOLUMINOUS AND SHAPED YARN FROM CHEMICAL FIBRES (FROM WORK CARRIED OUT AT V. N. I. I. V.) (Ob'emnaya i Fasonnaya Pryazha iz Khimicheskikh Volokon (iz Rabot VNIIV)) tr. by V. A. Soloduhin. [1962] [13]p. (foreign text included) 5 refs. [CSIRO] Trans. 5749.
Order from OTS or SLA $1.60 62-33553

Trans. of Tekstil'naya Promyshlennost' (USSR) 1961, v. 21, no. 1, p. 14-19.

DESCRIPTORS: *Fibers (Synthetic), Textiles, Molecular structure, Heat treatment, Mixtures, Processing, *Threads.

Mikhailov, N. V. and Shablygin, M. V.
TECHNIQUES OF OBTAINING AND EVALUATING THE IR-SPECTRA OF FIBERS IN POLARISED LIGHT. 26 Sep 62, 10p. 8 refs. [Trans] T.1440; [DSIR] NLL M.10014.
Order from OTS or SLA $1.10 63-15210

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 8, p. 1155-1162.

DESCRIPTORS: *Fibers, *Fibers (Synthetic), *Infrared spectroscopy, Light, Polarization, Absorption spectra.

Techniques of obtaining IR-spectra of fibres in polarised light are examined and discussed. Two techniques are shown to be effective for this purpose: parallel packing of the fibres and the use of the reflecting microscope. The deficiences of each are examined. A relationship is inferred between the quality of the fibre packing and the observable transmissions of the absorption bands in the fibre. Means of standardising fibre exposures are submitted. The feasibility of recording spectra of single fibres microscopically at room and elevated temperatures (250°C) is brought out. (Author)

Navarre, G.
APPARATUS FOR MEASURING CRIMP OF FIBERS (Apparat zum Messen der Kräuselung von Fasern). 21 June 62 [6]p. (foreign text included).
Order from SLA $1.10 63-10810

Trans. of Reyon, Zellwolle [und Andere Chemiefasern] (West Germany) 1959, v. 9, no. 12, p. 786-787.

DESCRIPTORS: *Fibers, Crimping tools, Measurement, *Test equipment.

Sporyagina, E. A., Ozernikova, B. I., and others.
THE EFFECT OF THE NUMBER AND DIAMETER OF SPINNERET ORIFICES ON THE PHYSICAL-MECHANICAL PROPERTIES OF CORD YARNS. 4 June 62, 6p.
Order from OTS or SLA $1.10 63-10783

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 1, p. 68-69.
Another trans. is available from ATS $5.50 as ATS-21P63R [1962] 4p.

DESCRIPTORS: *Textiles, *Machines, *Cordage, *Fibers, Physical properties, Mechanical properties, Design.

The physical-mechanical properties of cord yarn obtained with spinnerets of different types were studied. Among all experimental spinnerets the best physical-mechanical properties were obtaines with spinnerets with 1000 openings, diameter 0.06, with preliminary spinnerets with 3000 openings, diameter 0.05. With spinnerets with 1000 openings, 0.06 diameter, and with preliminary spinnerets with 3000 openings, 0.06, the yarn breakage fell to one-half as compared to spinning with spinnerets with 600 openings, 0.08 diameter. (Author)

Suyama, Hidenari and Kamizuki, Eiichi.
ACETALIZATION OF PVA BY BENZALDEHYDE.
[1962] 12p.
Order from SLA $1.60 62-18941

Trans. of [Kyoto Daigaku] Nippon Kagaku Sen-i Kenkyusho [Koenshu] (Japan) 1941, v. 6, p. 245-253.

DESCRIPTORS: *Synthetic fibers, *Polyvinyl alcohol, Acetylation, *Benzaldehydes, *Acetyl plastics, Synthesis, Tensile properties.

Topics include: Method of polyvinyl alcohol acetalization; determination of the degree of acetalization; the reaction of acetalization; relationship between the degree of acetalization and the dry and wet softening points; and, strength and elongation of the acetalized fiber.

Paints and Finishes

Dmitriev, P. I. and Dogadkina, L. A.
ALKYD RESINS ON THE BASE OF POLYGLYCOLS AND POLYGLYCEROLS. [1962] [25]p. (refs. omitted).
Order from OTS or SLA $2.60 62-18189

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1941, v. 14, no. 1, p. 110-119.

DESCRIPTORS: *Plastic films, *Alkyd resins, Production, *Glycols, *Glycerols, Polymers, Hardness, Elasticity, Viscosity.

Jedlinski, Zbigniew and Uminski, Tadeusz.
THE INFLUENCE OF TRIPHENYLMETHYL AND BENZOYL PEROXIDE ON THE POLYMERIZATION AND DRYING OF LINSEED AND TUNG OILS (Wplyw Trojfenylometylu i Nadtlenku Benzoilu na Polimeryzacje i Schniecie Olejow Inianego i Tungowegc tr. by Cz. Pawelec. 1963, 12p. 8 refs. PL-480 Agr.
Order from OTS $0.50 61-11388

Trans. of Przemysl Chemiczny (Poland) 1957, v. 13(36) no. 7, p. 401-405.

DESCRIPTORS: *Paints, Oils, *Vegetable oils, *Linseed oil, Polymerization, Dehydration, Desiccants, Catalysts, Free radicals, *Triphenylmethanes, *Benzoyl radicals, *Peroxides.

A marked influence of free organic radicals on the course of the drying of tung oil was confirmed using triphenylmethyl. This compound only slightly influences the drying of linseed oil. The insignificant activity of triphenylmethyl and benzoyl peroxide as catalysts of tung oil thermal polymerization is explained by the partial decomposition of these substances at an elevated temperature required for polymerization, and also by inactivation of a certain number of radical molecules by small quantities of moisture contained in oils. The fact that the drying of tung oil is promoted by triphenylmethyl with minimum access of oxygen also suggests that there may be manifold uses in practice for this type of organic siccative. Drying of tung oil with triphenylmethyl added gives a smooth and transparent coating. The patterns so characteristic for tung oil do not develop. This fact indicates the influence of free radicals on the mechanism of the drying of tung oil.

Photographic Materials

COLOR ELECTRO-PHOTOGRAPHIC METHOD.
[1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-20481

Trans. of published Japanese patent 2247/62.

DESCRIPTORS: *Electrophotography, *Color film, Photographic chemicals, Photographic emulsions, Dyes.

In the invented color electro-photographic method an insulating photo-conductive layer is formed on a transparent sheet whereon are printed in mosaic or matrix pattern the two-color, or more than three-color net points. Using this layer as electric photo-sensitive film, electrostatic charge is uniformly applied thereto so as to form an electrostatic latent image on the photo-sensitive film by means of exposure through said transparent sheet on which the colored net points are printed. The image is then developed by developing powder and turned into a color transparent image either by stripping off the transparent sheet, or by chemically removing the insulating photo-conductive substance. (Author)

TECHNICOLOR PRINTING METHOD BY ELECTRIC PHOTOGRAPHY. [1962] 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-20483

Trans. of published Japanese patent 3192/62.

DESCRIPTORS: *Electrophotography, *Color film, Photographic paper, Photographic filters, Photographic chemicals, Dyes.

The invention relates to a method and means of obtaining a natural color print by making a plurality of monochromatic printing sheet papers out of, for instance, colored or technicolored transparent film using a plurality of filters and laminating such printing sheets. (Author)

Eggert, J.
THE SPECTRAL SENSITIVITY OF PHOTOGRAPHIC EMULSIONS. [1963] 5p.
Order from ATS $9.25 ATS-73Q67G

Trans. of Ann[alen der] Physik (East Germany) 1959, ser. 7, v. 4 [no. 1/5] p. 140-144.

DESCRIPTORS: Spectra (Visible and Ultraviolet), Sensitivity, *Photographic emulsions.

Eichler, W. and Kastl, A.
SOME EXPERIMENTS FOR THE AVOIDANCE OF HALATION BY REFLECTION. [1962] 3p.
Order from SLA $1.10 62-20482

Trans. from AGFA Aktiengesellschaft für Photofabrikation, Leverkusen. Mitteilungen aus den Forschungslaboratorien der A G F A Leverkusen-München (Germany) [1955] v. 1.

DESCRIPTORS: *Photographic film, *Photographic emulsions, Reflection, Photographic images, Inhibition, Dyes.

Fridkin, V. M.
THE ISOOPAQUE IN ELECTROPHOTOGRAPHY (XEROGRAPHY). [1963] 5p.
Order from ATS $6.75 ATS-15Q58R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 143, no. 4, p. 825-828.

DESCRIPTORS: *Electrophotography, Optical properties.

Grenishin, S. G. and Cherkasov, Yu. A.
THE CURRENT STATUS OF ELECTROPHOTOGRAPHY. [1963] 16p.
Order from ATS $22.85 ATS-28Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 3, p. 229-239.

DESCRIPTORS: *Electrophotography.

Heilmann, M.
THE AGFA COLOR BLEACHING AND FIXING BATH. [1962] 9p. (figs. omitted) 8 refs.
Order from SLA $1.10 62-10993

Trans. of AGFA [Aktiengesellschaft für Photofabrikation, Leverkusen. Mitteilungen aus den Forschungslaboratorien der A G FA Leverkusen-München (Germany) 1955] v. 1, p. 256-261.

DESCRIPTORS: *Photographic chemicals, *Color film, Processing.

Kawasaki, M.
PHOTOGRAPHIC PROPERTIES OF SILVER CARBOXYLATE EMULSIONS. PT. 2. PHOTOGRAPHIC SENSITIVITY OF SILVER AROMATIC CARBOXYLATE EMULSIONS. [1963] 10p.
Order from ATS $15.50 ATS-17Q67J

Trans. of Nihon Shashin Gakkai Kaishi (Japan) 1962, v. 25, no. 2, p. 82-88.

DESCRIPTORS: *Photographic emulsions, Photochemistry, *Silver compounds, Carboxylic acids, Esters, Sensitivity.

Kirillov, E. A. and Gol'denberg, A. B.
EFFECT OF PLASTIC DEFORMATION ON THE SPECTRAL ABSORPTION OF SILVER IMPURITY CENTERS IN A FINE-GRAIN SILVER CHLORIDE EMULSION. [1963] 7p.
Order from ATS $11.50 ATS-03Q68R

Trans. of Zh[urnal] Nauchn[oi] i Prikl[adnoi] Fotogr[afii] i Kinematogr[afii] (USSR) 1962, v. 7, no. 3, p. 176-181.

DESCRIPTORS: Creep, Deformation, Absorption spectrum, *Silver, Impurities, Grain structures, Silver compounds, Chlorides, Colloids.

Kiwaki, H., Komeiji, S., and Nakasone, H.
REVERSAL DEVELOPMENT IN CONTINUOUS TONE ELECTROPHOTOGRAPHY BY THE MAGNETIC BRUSH METHOD. [1963] 8p.
Order from ATS $9.50 ATS-70Q67J

Trans. of Denshi Shashin (Japan) 1962, v. 4, no. 1, p. 18-22.

DESCRIPTORS: *Electrophotography.

Levinson, I. B. and Plavina, I. Z.
MECHANISM OF THE FORMATION OF A LATENT ELECTROPHOTOGRAPHIC IMAGE IN ZINC LAYERS [O Mekhanizme Obrazovaniya Skrytogo Elektrofotograficheskogo Izovrazheniya v Sloyakh iz Okisi Tsinka]. [1963] 4p.
Order from ATS $6.00 ATS-14Q68R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 143, no. 4, p. 822-824.
Another trans. is available from OTS or SLA $1.10 as 62-20019 [1962] [8]p.

DESCRIPTORS: *Electrophotography, Zinc compounds, Oxides, *Photographic chemicals.

Rath, W.
PROCESS FOR THE PREPARATION OF PHOTOGRAPHIC CONTRASTS OR IMAGES. 2 Oct 62, 3p.
Order from OTS or SLA $1.10 63-10079

Trans. of German patent 634, 306, by Porzellanfabrik Kahla, filed 20 Mar 34, issued 31 Aug 36.

DESCRIPTORS: *Photographic images, *Photographic plates, Light, Sensitivity.

The invention concerns a process for the preparation of photographic contrasts or images, characterized in that sintered, TiO_2-containing ceramic masses in the form of plates and in other suitable forms serve as light-sensitive materials. The TiO_2 content of the

light-sensitive ceramic masses is preferably kept between 70 and 100%, and is finely ground, mixed with a plastic binder, and applied on some support such as glass, metal, wood, celluloid, paper, and the like. (Extract)

Plastics

Adams, George Mellen and Wakefield, Sidney John.
IMPROVEMENT OF PRINTING ON PLASTIC FILMS. 14 Sep 62 [17]p.
Order from OTS or SLA $1.60 63-10815

Trans. of French patent 1,058,934, gr. 12, cl. 7, by Visking Corp., USA, appl. filed 20 Mar 52, granted 10 Nov 53, pub. 19 Mar 54 (pat. appl. filed in the USA, 23 Mar 51).

DESCRIPTORS: *Plastics, Films, *Printing, Machines, Adhesion, Ink, Design.

Danon, J., Jobard, M. and others.
CERTAIN PROPERTIES OF GRAFT POLYMERS IN SOLUTION. [1962] 18p. (figs. omitted) 20 refs.
Order from SLA $1.60 62-18278

Trans. of Journal of Polymer Science (U. S.) 1959, v. 34 [no. 127] p. 517-530.

DESCRIPTORS: *Polymers, Solutions, Compatibility, Solubility, Separation, Fractionation, Chemical precipitation, Theory.

Ferraris, E.
POLYETHYLENE GLYCOL TEREPHTHALATE, PT. II. 26 Apr 62 [38]p. 40 refs.
Order from SLA $3.60 63-10793

Trans. of Materie Plastiche (Italy) 1960, v. 24, no. 8, p. 775-790.

DESCRIPTORS: *Polyethylene plastics, Glycols, *Phthalates, Production, Chemical properties, Physical properties, *Plastic films, Thickness, Bacteria, Fungi, Toxicity, *Metal films, Machines, *Bonding, *Dyes, Printing, *Ink, *Laminated plastics, *Static electricity, Static eliminators, Disinfectants, Aging, *Ultraviolet light, Absorbants, *Adhesives.

A state of the art review dealing with plastic films of polyethylene glycol terephthalate. Topics include: preparation, thickness and width; resistance to fungi and bacteria; toxicity; workability; metallization; heat sealing and bonding; dyeing; printing with ink; laminating; static electricity and antistatic agents; sterilization; and, resistance to aging.

Holmüller, W.
THE INFLUENCE OF STRUCTURE ON THE PHYSICAL PROPERTIES OF MACROMOLECULAR SUBSTANCES. 16 Apr 62 [15]p. (figs. omitted) 12 refs.
Order from SLA $1.60 63-10820

Trans. of Plaste und Kautschuk (Germany) 1961, v. 8, p. 296-300.

DESCRIPTORS: *Polymers, *Plastics, Physical properties, Molecular structure, Glass, Crystals, Sound transmission, X-ray diffraction, Analysis.

Jasching, W.
DEGRADATION AND STABILIZATION OF POLYVINYL CHLORIDE. [1963] 14p.
Order from ATS $19.75 ATS-19Q67G

Trans. of Kunststoffe (West Germany) 1962, v. 52, no. 8, p. 458-463.

DESCRIPTORS: *Polyvinyl chloride, Stabilization, Degradation.

Karnojitzky, V.
POLYMERIC PEROXIDES AND THE ROLE OF OXYGEN IN VINYL POLYMERIZATION. [1963] 18p.
Order from K-H $18.00 K-H 9672

Trans. of Chimie et Industrie (France) 1959, v. 81, p. 895-901.

DESCRIPTORS: Polymers, *Polymerization, *Peroxides, *Oxygen, *Vinyl radicals, *Vinyl plastics.

Kharitonov, V. M., Speranskii, A. A., and Got'e, T. N.
DELUSTRING POLYAMIDE RESIN DURING PRODUCTION. 27 Feb 62, 3p. (figs. omitted) 7 refs. [Trans] T. 1358; [DSIR] NLL M 8927.
Order from OTS or SLA $1.10 63-15180

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 6, p. 56-57.
Another trans. is available from ATS $6.00 as ATS-44P64R [1962] 4p.

DESCRIPTORS: *Polyamide plastics, Production, *Amides, Plastics.

A method of preparing stable and highly disperse aqueous suspension of TiO_2 is developed for delustring polycaproamide during production. Technical details are given for delustring polycaproamides in the autoclave. The process of delustring in the melt of ϵ-caprolactam in the NP unit was tested on a production scale. (Author)

Krause, K. H.
NEW FIELDS OF USE FOR BORON COMPOUNDS. 2 May 61, 6p. 21 refs.
Order from SLA $1.10 63-10497

Trans. of Kunststoff-Rundschau (West Germany) 1961, v. 8, no. 1, p. 25-26.

DESCRIPTORS: *Boron compounds, *Diboranes, *Plastics industry, Polymers, Hydrides, Polymerization, Synthetic rubber, Reduction (Chemistry), Heat-resistant materials.

Losev, I. P., Kuznetsov, D. A., and Valgin, V. D.
SYNTHESIS OF FOAMED MATERIALS ON THE BASIS OF PRODUCTS OF THE REACTION OF EPOXY COMPOUNDS WITH CERTAIN ANHYDRIDES OF DIBASIC ACIDS. [1962] 4p. 7 refs.
Order from OTS or SLA $1.10 63-10595

Trans. of Khimiko-Tekhnologicheskii Institut, Moscow. Trudy (USSR) 1959, no. 29, p. 11-14.

DESCRIPTORS: *Foams, *Expanded plastics, Synthesis Physical properties, *Epoxy resins, Dibasic acids, Anhydrides, Chlorides, *Cyclopentadiene, Toluenes, Cyanates.

Foamed materials were obtained from the reaction of epoxy compounds of low molecular weight with adducts of hexachlorocyclopentadiene in the presence of small amounts of toluene diisocyanate, the products thus obtained being characterized by a series of excellent properties and in particular by a considerable stability to heat and self extinguishing on removal from a flame source. (Author)

Mikhailov, N. V., Fainberg, E. Z., and Gorbacheva, V. O.
A STUDY OF THE MOLECULAR STRUCTURE OF STEREOREGULAR POLYMERS. I. ISOTACTIC POLYPROPYLENE. 9 May 62 [14]p.
Order from OTS or SLA $1.60 63-10781

Trans. of Vysokomol[ekulyarnye] Soed[ineniya] (USSR) 1959, v. 1, no. 1, p. 143-148.

DESCRIPTORS: *Polyethylene plastics, *Propenes, Polymers, Physical properties, Chemical properties, Molecular structure, X-ray diffraction analysis, Calorimetry, Viscosity, *Plasticizers, *Heptanes.

This paper gives the results of the study of the physico-chemical properties of isotactic polypropylene on the basis of X-ray investigations, data of heat capacity and viscosity of the dilute solutions.

Nakano, S., Iwasaki, K. and others.
METHOD FOR THE MANUFACTURE OF VINYL ETHER POLYMERS. [1963] 4p.
Order from ATS $8.00 ATS-81Q67J

Trans. of Japanese [published] patent 13,885 (1962) pub. 13 Sep 62, appl. filed 7 May 60, appl. 23,075 (1960), by Mitsubishi Kasei Kogyo Co., Ltd.

DESCRIPTORS: *Vinyl plastics, Ethers, Polymers.

Natta, G., Corradini, P., and Bassi, I. W.
CRYSTALLINE STRUCTURE OF ISOTACTIC POLY-ACETALDEHYDES. [1962] [17]p. 11 refs.
Order from SLA $1.60 63-10821

Trans. Accad[emia] Naz[ionale dei] Lincei. [Classe di Scienze Fiziche, Matematiche i Naturali. Rendiconti] (Italy) 1960 [ser. 8] v. 28, p. 284-292.

DESCRIPTORS: *Acetal plastics, *Acetaldehydes, Polymers, *Crystal structure, Molecular structure, Molecular properties, X-ray diffraction analysis

Natta, G., Pasquon, I., and Giuffre, L.
MECHANISM OF THE REGULATION OF MOLECULAR WEIGHTS OF ISOTACTIC POLYPROPYLENE BY ZINC ALKYLS. [1962] [12]p.
Order from SLA $1.60 63-10800

Trans. of La Chimica e l'Industria (Italy) 1961 v. 43 [no. 8] p. 871-874.
Another trans. is available from CTS (Chem) $9.20 subsequent copies $1.50/ea as CTS(Chem)-236 [1961] 2300 words.

DESCRIPTORS: *Polyethylene plastics, *Propenes, Polymerization, Catalysis, Molecular weight, Control, *Ziegler catalysts, *Alkyl radicals, Ethyl radicals, *Zinc compounds, Aluminum compounds, Titanium compounds.

When polymerizing propylene to isotactic polymers, with the aid of a catalytic system prepared from violet titanium trichloride and triethyl aluminum, in the presence of diethyl zinc, the molecular weight of the polymer formed is considerably reduced by an alkyl exchange process between the diethyl zinc and the growing polymeric chains. It is shown that this exchange process introduces into the polymer a Zn end group from diethyl zinc for each C_2H_5 end group; this result agrees with the hypotheses expressed in previous papers. The results obtained also permitted an estimate of the distribution of the molecular weights of isotactic polypropylene; $\overline{MW}v/\overline{MW}n = 8$. (Author)

Petrov, G. S. and Tsvetkova, M. E.
COMBINATION OF UREA AND PHENOL RESINS. 6 Sep 62 [18]p. 26 refs.
Order from OTS or SLA $1.60 63-10826

Trans. of Khim[iko]-Tekh[nologicheskii Institut] Moscow. Trudy (USSR) 1959 [no. 29] p. 23-33.

DESCRIPTORS: Synthesis, *Urea, *Phenolic resins, *Urea-formaldehyde resins, Fractionation, Physical properties, Condensation reactions, Reaction kinetics, Mechanical properties.

Rado, R., Shimunkova, D., and Malyak, L.
DEGRADATION AND CHAIN BUILDING OF POLY-PROPYLENE UNDER THE INFLUENCE OF PEROX-IDES. [1962] [20]p. 8 refs.
Order from OTS or SLA $1.60 63-10784

Trans. of Vysokomolek[ulyarnye] Soed[ineniya] (USSR) 1962, v. 4, no. 2, p. 304-311.

DESCRIPTORS: *Polyethylene plastics, *Propenes, Polymers, Degradation, Polymerization, Chain reactions, Reaction kinetics, *Peroxides, Chemical bonds, Molecular weight, Molecular isomerism.

Both in the case of polyethylene and polyisobutylene and in the case of polypropylene, monomolecular decomposition of peroxide is accompanied by a chain reaction with induced decomposition of the second order. From evaluation of the double bond content in the polymer, as well as from the kinetics of decomposition of the peroxide, it follows that the macroradicals are formed not only as a result of a transfer reaction but also as a result of parallel reactions of addition to the primary radicals to the double bonds of the polypropylene. In the

total reaction of the polypropylene macroradicals, the molecular weight is changed, which, when the peroxide concentration is increased, decreases at first to a minimum and then increases. The degradation reaction consists in the isomerization of the polymer radicals in the process of intramolecular transfer. Final transformation in the polyolefin chain depends both on the structure of the active group of the free radical and on the spatial disposition of the chain with respect to the active reactions of the polymer radicals.

Rafikov, S. R. and others.
[INVESTIGATIONS] IN THE FIELD OF POLYMER SYNTHESIS. IV. SYNTHESIS OF COPOLYAMIDES FROM XYLYLENE DIAMINES, HEXAMETHYLENE DIAMINE AND ADIPIC ACID. 23 July 62. 6p. 7 refs. Trans. T. 1434; [DSIR] NLL M. 10013.
Order from OTS or SLA $1.10 63-15211

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962 v. 4, no. 3, p. 414-418.

DESCRIPTORS: *Polymers, Polymerization, *Polyamide plastics, Synthesis (Chemistry), Xylylene, Cyclohexanes, Amines, Adipic acids, Chemical reactions, *Copolymerization, Condensation reactions.

Copolyamides, most of which were suitable for spinning into stable, transparent fibres, were synthesised by the polycondensation with adipic acid of a mixture of p- and m-xylylene diamines, a mixture of p-xylylene diamine and hexamethylene diamine, a mixture of m-xylylene diamine and hexamethylene diamine. It has been established that the m. p. and flow temperature of the copolymers from p- and m-xylylene diamines, p-xylylene diamine and hexamethylene diamine with adipic acid increase with the content of p-xylylene diamine in the copolyamide, and the softening temperature exhibits a clearly defined minimum. The curve representing the m. p. and softening point as a function of composition for the copolymer from a mixture of m-xylylene diamine and hexamethylene diamine with adipic acid is found to have a minimum at a diamine ratio of 1 : 1. (Author)

Rysavy, D. and Balaban, L.
DEGRADATION OF POLYPROPYLENE BY CATALYSTS. 9 May 62 [11]p. 4 refs.
Order from OTS or SLA $1.60 63-10811

Trans. of Vysokomol[ekulyarnye] Soed[ineniya] (USSR) 1961, v. 3 [no. 3] p. 470-474.

DESCRIPTORS: *Polyethylene plastics, *Propenes, Polymers, Degradation, *Catalysts, *Ziegler catalysts, Aluminum compounds, Zinc compounds, Ethylenes, Titanium compounds, Chlorides, *Antioxidants.

Tsypkina, O. Ya.
PLASTICS-BONDED FIBRE GLASS REINFORCEMENT DEVELOPED AT THE "YuZhNII" SCIENTIFIC RESEARCH INSTITUTE (Stekloplastikovaya Armatura "YuZhNII") tr. by G. N. Gibson. July 62 [5]p. Library Communication no. 1107.
Order from OTS or SLA $1.10 62-33617

Trans. of Beton i Zhelezobeton (USSR) 1961, no. 9, p. 417-418.

DESCRIPTORS: *Plastics, *Glass textiles, Polymers, Adhesion, Concrete, Epoxy plastics, *Reinforcing materials, Physical properties, Binders.

Ziegler, K.
THE MÜLHEIM NORMAL PRESSURE POLYETHYLENE PROCESS. [1962] [5]p. 14 refs.
Order from SLA $1.10 62-20131

Trans. of Kunststoffe (West Germany) 1955, v. 45, no. 11, p. 506-507 (unabridged version pub. in Angew[andte] Chemie (West Germany) 1955, v. 67 [no. 19/20] p. 541[-547]).

DESCRIPTORS: *Polyethylene plastics, Production, *Ziegler catalysts, Catalysis, Theory, Ethylenes, Polymerization, Pressure.

Wood and Paper

Albrect, J. and Bernecker, H.
EVALUATION OF INTAGLIO PRINTING PAPER IN THE LABORATORY AND IN INDUSTRIAL PRINTING. [1962] 10p. (figs. omitted).
Order from SLA $1.10 63-10169

Trans. of Fogra Mitt[eilungen] (West Germany) 1961, no. 29, June, p. 14-22.

DESCRIPTORS: *Paper, *Printing, Mechanical properties, Tests, Test methods.

Gromov, V. S. and Odintsov, P. N.
CERTAIN CHARACTERISTICS OF THE HYDROTROPIC METHOD OF PRODUCING PULP AND WAYS OF IMPROVING IT. [1963] 11p.
Order from ATS $17.25 ATS-17Q68R

Trans. of Akad[emiya] Nauk Latv[iiskoi] SSR [Riga]. Inst[itut] Lesokhoz[yaistvennykh] Probl[em] i Khim[ii] Drevesiny. Tr[udy] 1959, v. 17, p. 93-103.

DESCRIPTORS: *Wood pulp, Water, Processing.

Gromov, V. S. and Odintsov, P. N.
THE HYDROTROPIC PULPING OF ASPEN WOOD AND THE EFFECT OF VARIOUS FACTORS ON IT. [1963] 16p.
Order from ATS $21.50 ATS-18Q68R

Trans. of Akad[emiya] Nauk Latv[iiskoi] SSR [Riga]. Inst[itut] Lesokhoz[aistvennykh] Probl[em] i Khim[ii] Drevesiny. Tr[udy] 1957, v. 12, p. 79-90.

DESCRIPTORS: *Wood pulp, Water, Processing, Wood.

Kaszynska, Janina.
CALCIUM DETERMINATION IN CHEMICAL PULPS BY MEANS OF A FLAME PHOTOMETER (Oznaczanie Wapnia w Masach Celulozowych za Pomoca Fotometru Plomieniowego) tr. by Anna Staniewska. 1963 [15]p. 7 refs. PL-480 Agr.
Order from OTS $0.50 61-11389

Trans. of Instytut Celulozowo-Papierniczy. Prace (Poland) 1955, v. 4, no. 2, p. 55-60.

DESCRIPTORS: *Wood pulp, Rayon, Chemical analysis, *Calcium, Determination, *Photometers, Operation, Galvanometers, Titration.

Topics include: The principles of photometry; the construction of a Zeiss type III flame photometer, preparation of standard solutions; determination of the "turning point"; establishing the correlation between the indications of the galvanometer and the concentration of solutions of given Ca^{++} contents; determination of the precision of measurements made with the flame photometer; the influence of other cations (especially Na^{+} and Mg^{++}) on the accuracy of the determinations; and, a comparison of photometric and titrimetric determinations of calcium content in rayon grade pulps.

Willems, P.
THE TREATMENT OF PULP BY KINEMATIC HIGH FREQUENCY AND ULTRASONICS. Nov 61, 23p. (figs. refs. omitted).
Order from SLA $2.60 63-10941

Trans. of A[ssociation] T[echnique de l']I[ndustrie] P[apetiere]. Bull[etin] (France) 1960, no. 2, p. 66-83. Another trans. is available from SLA $2.60 as 61-20185 [1961] 22p.

DESCRIPTORS: High frequency, *Ultrasonics, *Wood pulp fibers, *Paper industry, Electric currents.

MATHEMATICS

AMERICAN MATHEMATICAL SOCIETY TRANSLATIONS, 1960, SER. 2, VOL. 13. 1960, 346p.
Order from American Mathematical Society, Providence, R. I. $5.30

Trans. of Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Mat[ematicheskaya] 1956, v. 20, p. 673-678; Mat[ematicheskii] Sb[ornik] (USSR) 1946, v. 19(61) [no. 2] p. 239-262; 1950, v. 26(68) [no. 2] p. 247-264; 1957, v. 41(83) [no. 1] p. 49-80; no. 43(85) [no. 2] p. 257-276; Moskov[skoe] Mat[ematicheskoe] Obs[hchestvo]. Trudy (USSR) 1956, v. 5, p. 367-432; Uspekhi Mat[ematicheskikh] Nauk (USSR) 1956, v. 11, no. 5(71) p. 37-44; 1957, v. 12, no. 2(74), p. 43-118; 1958, v. 13, no. 1(79) p. 3-85.

DESCRIPTORS: *Mathematics, Translations, *Number theory, Algebraic geometry, Special functions, *Operators (Mathematics), Functional analysis, Matrix algebra, Measure theory.

Contents:
On cubic congruences to a prime modulus, by Yu. I. Manin.
Asymptotic-geometric and ergodic properties of sets of lattice points on a sphere, by Yu. V. Linnik
The application of $\zeta(s)$ to the sieve of Eratosthenes, by A. I. Vinogradov
On a class of linear operators in Hilbert space, by M. S. Livshits
Isometric operators with equal deficiency indices, quasi-unitary operators, by M. S. Livshits
Spectral theory of operators in spaces with an indefinite metric, I, by I. S. Iokhvidov and M. G. Krein
Infinite matrices in an analytic space, by M. G. Khaplanov
The basic propositions on defect numbers, root numbers and indices of linear operators, by I. O. Gokhberg and M. G. Krein
Spectral analysis of non-selfadjoint operators and intermediate systems, by M. S. Brodskii and M. S. Livshits.

AMERICAN MATHEMATICAL SOCIETY TRANSLATIONS, 1960, SER. 2, VOL. 16. 1960, 484p.
Order from American Mathematical Society, Providence, R. I. $5.40

Trans. of Moskov[skoe] Mat[ematicheskoe] Obs[hchestvo]. Trudy (USSR) 1954, v. 3, p. 181-270; 1956, v. 5, p. 89-201; Uspekhi Mat[ematicheskikh] Nauk (USSR) 1952, v. 7, no. 6(52) p. 3-96; 1956, v. 11, no. 6(72) p. 3-40; 1957, v. 12, no. 1(73) p. 143-258. ##Other translations are available elsewhere.

DESCRIPTORS: *Mathematics, Translations, *Differential equations, *Functions, *Operators (Mathematics) Numerical methods and procedures, *Functional analysis, *Groups (Mathematics), Potential theory, Matrix algebra, Differential geometry, Calculus, Integration, *Partial differential equations, Calculus of variations, Numerical analysis, Shock waves, Difference equations, Sequences, Transformations (Mathematics), Harmonic analysis, Mechanics, Trajectories, Hydrodynamics, Elasticity, Series, *Applied mathematics

Contents:
Asymptotic laws of distribution of the characteristic values for certain special forms of differential equations of the second order, by A. A. Dorodnitsyn
Investigation of the spectrum and the expansion in eigenfunctions of a non-selfadjoint operator of the second order on a semi-axis, by M. A. Naimark
The method of near systems in the space of analytic functions and its application to interpolation, by M. A. Evgrafov
##On some problems of functional analysis, by I. M. Gel'fand
Group representations, by F. A. Berezin and others
Scientific communications:
Reconstruction of the potential energy from the dispersion matrix, by Z. S. Agranovich and V. A. Marchenko
Differential geometry of smooth manifolds, by I. Ya. Bakel'man
Hypercomplex systems with continuous basis, by Yu. M. Berezanskii and S. G. Krein
The Laplacian operators on semisimple Lie groups and on some symmetric spaces, by F. A. Berezin

On the critical values of some functionals in Banach spaces, by Yu. G. Borisovich
Integration and differentiation of functions of hermitian operators depending on a parameter, by Yu. L. Daletskii
On regular and parabolic systems of partial differential equations, by S. D. Eidel'man
Variational problems with a delayed argument, by L. E. El'sgol'ts
Construction of transformation operators and the solution of a problem of moments for ordinary linear differential equations of arbitrary order, by M. K. Fage
Approximate determination of proper values and perturbation theory, by M. K. Gavurin
On the subrings of a ring of continuous functions, by I. M. Gel'fand
##A difference method for the calculation of shock waves, by S, K. Godunov
On the index, zero-elements and kernel elements of unbounded operators, by I. Ts. Gokhberg
Unitary representations of real simple Lie groups, by M. I. Graev
On the convergence of sequences of functions in some function spaces, by V. P. Il'in
On the approximate solution of nonlinear operator equations by iterative methods, by Yu. Ya. Kaazik
On linear and bilinear transformations of sequences in a Banach space, by G. F. Kangro
Harmonic analysis of functions of rapid growth, by B. I. Korenblyum
Investigation of the spectrum of a non-linear operator in a neighborhood of a branch point, and application to the problem of longitudinal bending of a compressed rod, by M. A. Krasnosel'skii
On the possibility of generalizing the method of orthogonal trajectories, by M. A. Krasnosel'skii
Differential equations in Banach space and their application in hydrodynamics, by S. G. Krein
On non-linear equations with positive non-linearity, by L. A. Ladyzhenskii
The method of non-selfadjoint operators in dispersion theory, by M. S. Kivshits
The principle of St. Venant and oscillating functions, by S. I. Mel'nik
Some theorems of non-linear functional analysis and their application in the theory of local groups, by D. P. Mil'man
Structural characterization of functional spaces, by A. G. Pinsker
On a class of Banach spaces, by Ya. B. Rutitskii
Operator equations in a semi-ordered spaces and some qualitative theorems for linear partial differential equations, by M. A. Rutman
The investigation of the rapidity of convergence of the method of steepest descent, by B. A. Samokish
On the certain problems of the general theory of communative normed rings, by G. E. Gilov
Generalized resolvents of symmetric operators and eigenfunction expansions for a certain class of boundary-value problems, by A. V. Straus
Some problems of functional analysis and the variational methods of studying nonlinear equations, by M. M. Vainberg
On some methods of the approximate solution on nonlinear functional equations in Banach spaces, by V. A. Vertgeim
Application of the theory of partially ordered spaces to the study of self-adjoint operators in Hilbert space, by B. Z. Vulikh
On the approximation of abstract functions, by S. I. Zukhovitskii and S. B. Stechkin

AMERICAN MATHEMATICAL SOCIETY TRANSLATIONS, 1961, SER. 2, VOL. 17. 1961, 373p.
Order from American Mathematical Society, Providence, R. I. $5.50

Trans. of Uspekhi Mat[ematicheskikh] Nauk (USSR) 1954, v. 9, no. 3(61), p. 181-186; 1958, v. 13, no. 4(82) p. 89-172; 1959, v. 14, no. 2(86) p. 3-86; Mat[ematicheskii] Sb[ornik] (USSR) 1954, v. 35(77) p. 93-128; 1955, v. 37(79) p. 507-525; 1956, v. 39(81) p. 273-292; Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Mat[ematicheskaya] 1957, v. 21[no. 2] p. 171-198; Moskov[skii] Oblast[noi] Pedagog[icheskii] Inst[itut]. Uc[henye] Zap[iski] (USSR) 1957, no. 57, p. 121-141; Akad[emiya] Nauk SSSR. Doklady, 1956, v. 108, p. 179-182; 1957, v. 117 [no. 5] p. 745-747; and mono. Dopolneniya Teoriya Ortogonal'nykh Ryadov, Moscow, 1958.
DESCRIPTORS: *Mathematics, Translations, Groups (Mathematics), Algebras, Algebraic topology, Special functions, Integral transforms, Series, Functional analysis, Functions

Contents:
On some criteria of locally nilpotent groups, by B. I. Plotkin
Radical groups, by B. I. Plotkin
Generalized solvable and generalized nilpotent groups, by B. I. Plotkin
Groups with systems of complemented subgroups, by S. N. Chernikov
Groups with complemented subgroups, by N. V. Chernikova
Free topological algebras, by A. I. Mal'tsev
A version of the construction of a theory of generalized gamma-functions based on the Laplace transform, by B. S. Rimskii-Korsakov
Supplement to "Theory of Orthogonal Series", ed. with a supplement by N. Va. Vilenkin
A theorem of H. Bohr and its generalizations, by Yu. Yu. Trokhimchuk
ε entropy and ε capacity of sets in functional spaces, by A. N. Kolmogorov and V. M. Tikhomirov
The absolute ε entropy of metric spaces, by A. G. Vitushkin
On the representation of continuous functions of several variables by superpositions of continuous functions of a smaller number of variables, by A. N. Kolmogorov

PROBABILITY AND STATISTICS, VOL. 1. 1961, 306p.
Order from American Mathematical Scoeity, Providence, R. I. $4.80

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1949, v. 69, p. 301-304; 1951, v. 80, p. ##525-528; 1952, v. 82, p. ##513-516, ##661-663, ##837-843; v. 83, p. ##353-355; v. 85, p. ##25-27, ##485-488; 1954, v. 98, p. 731-738; Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Mat[ematicheskaya] 1950, v. 14, p. 95-100; 1951, v. 15, p. ##205-218; 1953, v. 17, p. 291-330; 1955, v. 19, p. 247-266; Uspekhi Mat[ematicheskikh] Nauk (USSR) 1951, v. 6, no. 1(41) p. 68-90; 1953, v. 8, no. 3(55) p. 135-142; 1958, v. 13, no. 2(80) p. 93-142; Ukrain[skii] Mat[ematicheskii] Zhurnal (USSR) 1953, v. 5, p. 291-298; [Chekhoslovatskii Matematicheskii Zhurnal] 1952, v. 2(77) p. 221-232; 1953, v. 3(78) p. 328; 1958, v. 8(83) p. 610-617; Leningrad U. Vestnik (USSR) 1956, v. 11, no. 1 [Seriya Matematiki,

Mekhaniki i Astronomii, no. 1] p. 49-52; Mat[emati-cheskii] Sb[ornik] (USSR) 1957, v. 42(84) no. 1, p. 11-44.
##Other translations are available from SLA as RT-434, 340, 339, 338 and 337, 787, 335, 336, 784 respectively in the order as named.

DESCRIPTORS: *Applied mathematics, *Probability, Statistical distributions, Stability, Statistical functions, Binomials, Sequential analysis, Mathematical expectation, Polynomials, Differential equations, Statistical processes, Mathematics

Contents:
On cycles in Markov chains, by I. V. Chulanovsk
On some properties of the totality of closed paths in a system of states and given transitions among them, by I. Z. Rozenknop
On the maxium discrepancy between two empirical distributions, by B. V. Gnedenko and V. S. Korolyuk
Necessary and sufficient statistics for a family of probability distributions, by E. B. Dynkin
The stability problem for a theorem of Cramer, by N. A. Sapogov
Two theorems on the behavior of empirical distribution functions, by B. V. Gnedenko and V. S. Mikhalevich
Linear statistics and the normal law, by Yu. V. Linnik
On the mutual disposition of two empirical distribution functions, by V. S. Mikhalevich
On a problem of the comparison of two empirical distributions, by B. V. Gnedenko and E. L. Rvacheva
Some results on the maximum discrepancy between two empirical distributions, by B. V. Gnedenko
On the empirical distribution function in the case of grouping of the data, by I. I. Gikhman
On the distribution of the number of excesses of one empirical distribution function over another, by B. V. Gnedenko and V. S. Mikhalevich
Asymptotic behavior of the binomial distribution, by Yu. V. Prokhorov
Limit theorems for a Markov chain of two states, by R. L. Dobrushin
On the role of the maximal summand in the summation of independent random variables, by B. V. Gnedenko
Sequential estimation of distribution-free tolerance limits, by M. Irzhina
Asymptotic formulas for stable distribution laws, by A. V. Skorokhod
Expression of the density of a stable distribution with exponent α greater than one by means of a frequency with exponent $\frac{1}{\alpha}$ by V. M. Zolotarev
On a theorem concerning stable distributions, by A. V. Skorokhod
Some limit theorems for sums of independent random variables with infinite mathematical expectations, by E. B. Dynkin
On polynomial statistics in connection with the analytical theory of differential equations, by Yu. V. Linnik
On analytic properties of stable distribution laws, by V. M. Zolotarev
On the probability of large deviations of random variables, by I. N. Sanov
On a property of normal distribution of any stochastic process, by Ya. Hajek
Spectral theory of multi-dimensional stationary random processes with discrete time, by Yu. A. Rozanov

PROBABILITY AND STATISTICS, VOL. 2. 1962, 251p.
Order from American Mathematical Society, Providence, R. I. $4.80

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1958, v. 119 [no. 4] p. 652-654; 1958, v. 121 [no. 1] p. 13-15, 52-55; Ukrain[skii] Mat[ematicheskii] Zhurnal (USSR) 1953, v. 5, p. 413-433; Casopis [pro] Pest[ovani] Mat[ematiky] (Czechoslovakia) 1955, v. 80, p. 17-31; 1957, v. 82, p. 182-194; 1958, v. 83, p. 327-329; [Chekhoslovatskii Matematicheskii Zhurnal] 1954, v. 4(79) p. 372-380; 1956, v. 6(81) p. 94-117; 1957, v. 7(82) p. 130-153; 1958, v. 8(83) p. 448-459; Akad[emiya] Nauk SSSR. Izv[estiya]. Ser[iya] Mat[ematicheskaya] 1947, v. 11, p. 111-138; 1949, v. 13, p. 281-300; 1954, v. 18, p. 185-200; Leningrad U. Vestnik (USSR) 1959 [v. 14] no. 1. Ser[iya] Mat[ematiki] Me[khaniki] i Astron[omii] no. 1, p. 14-23; Ped[agogicheskii] Inst[itut] Groznyi. Uch[enye] Zap[iski] (USSR) 1955, no. 1, p. 51-58; L'vov U. Uch[enye] Zap[iski] (USSR) 1954, v. 29, p. 5-44; Acta Math[emetica] (Hungary) 1956, v. 7, p. 99-106; Uspekhi Mat[emathicheskii] Nauk (USSR) 1958, v. 13, no. 5(83) p. 167-170.

DESCRIPTORS: *Applied mathematics, *Probability, Statistical distributions, Statistical processes, Statistical functions, Inequalities, Algebras, Factor analysis, Groups (Mathematics), Algebraic topology, Real variables.

Contents:
Some problems concerned with large deviations of the maximum of sums of independent identically distributed random variables, by A. A. Borovkov
On some limit theorems for conditional distributions and on problems of mathematical statistics connected with them, by I. I. Gikhman
Some rank distributions and their applications, by J. Hajek
Linear estimation of the mean value of a stationary random process with convex correlation function, by J. Hajek
Inequalities for the generalized student's distribution and their applications, by J. Hajek
On the distribution of some statistics in the presence of intra-class correlation, J. Hajek
Conditional probabilities on σ-algebras with countable basis, by M. Irzhina
The asymptotic behaviour of branching stochastic processes, by M. Irzhina
A local limit theorem for Markov chains, by A. N. Kolmogorov
On the accuracy of the approximation to a Gaussian distribution of sums of independent random variables, by Yu. V. Linnik
On α-factorizations of infinitely divisible probabilistic laws, by Yu. V. Linnik
The limit behaviour of the χ^2 distribution in the case of large deviations, by V. Rihter
Limit theorem of probability theory on compact topological groups, by Ya. I. Rivkind
On domains of attraction of multi-dimensional distributions, by E. L. Rvacheva
Maximum correlation coefficient (nonsymmetric case) by O. V. Sarmanov
Linear combinations of independent random variables and the normal distribution law, by V. P. Skitovich

On a problem concerning birth and death processes, by K. Urbanik
On an existence theorem for probability spaces, by V. Varadarayan
The theory of ordinary streams, by F. Zitek.

Davidenko, D. F.
ON THE APPROXIMATE SOLUTION OF SYSTEMS OF NONLINEAR EQUATIONS. [1962] 15p. 6 refs.
Order from OTS or SLA $1.60 63-10305

Trans. of [Ukrainskii Matematicheskii Zhurnal (USSR) 1953, v. 5, p. 196-206].

DESCRIPTORS: *Numerical analysis, *Numerical methods and procedures, *Equations, *Algebra, *Differential equations, Integration, Transformations (Mathematics).

Fuks, B. A. and [Shabat, B. V.].
FUNCTIONS OF A COMPLEX VARIABLE AND SOME OF THEIR APPLICATIONS, VOL. 2. 1961, 1v.
Order from PP

Trans. of mono. [Funktsii Kompleksnogo Peremennogo i Nekotorye Ikh Prilozheniya, v. 2, Moscow, 1959, 376p.]

DESCRIPTORS: *Complex variables, *Functions, Applied mathematics.

Godunov, S. K.
ON THE NUMERICAL SOLUTIONS OF BOUNDARY PROBLEMS FOR SYSTEMS OF LINEAR ORDINARY DIFFERENTIAL EQUATIONS. [1962] [7]p. 2 refs.
Order from OTS or SLA $1.10 63-10299

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1961, v. 16, no. 3(99), p. 171-174.

DESCRIPTORS: *Numerical methods and procedures, *Differential equations, Vector analysis, Integration, Polynomials, Matrix algebra.

A new method which is convenient for the numerical solution of boundary problems for systems of the form $y' = A(x)\,y + f(x)$, (y)is the unknown vector, A is the matrix, f(x) of the righthand part is also a vector, is suggested. (Author)

Kostovskii, A. N.
GEOMETRICAL CONSTRUCTIONS USING COMPASSES ONLY, tr. by H. Moss. 1961, 1v.
Order from PP

Trans. of mono. [Geometricheskie Postroeniya Odnim Tsirkulem, Moscow, 1959, 61p.].

DESCRIPTORS: *Geometry, *Geometric forms, Construction, Tools.

Lunts, G. L.
ON SERIES OF TAYLOR-DIRICHLET TYPE (O Ryadakh Tipa Taylor- Dirichlet) tr. by A. Pingell. 1963, 12p. 2 refs. N R L Trans. no. 933.
Order from OTS $0.50 63-11593

Trans. of Akademiya Nauk Armyanskoi SSR [Erevan]. Izvestiya. [Seriya] Fiziko-Matematicheskikh Nauk, 1961, v. 14, no. 2, p. 7-16.

DESCRIPTORS: *Taylor's series, Series, Integrals, Sequences, Complex numbers

A determination is made of the convergence region of the following series of Taylor-Dirichlet type:

$$\sum_{n=1}^{\infty} a_n z^{m_n} e^{-\lambda_n z}$$

where $\lambda_{n1} > 0$, $\lambda_n \uparrow \infty$, and m_n denotes the natural numbers or zeros.

Pukhov, G. E. and Borkovskii, B. A.
ELECTRICAL SIMULATION OF A SYSTEM OF LINEAR ALGEBRAIC EQUATIONS WITH AN ARBITRARY COEFFICIENT MATRIX (Ob Elektricheskom Modelirovanii Sistemy Lineinykh Algebraicheskikh Uravnenii s Proizvol'noi Matritsei Koeffitsientov). [1962] 6p. (foreign text included) 3 refs.
Order from OTS or SLA $1.10 63-10189

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1960 [v. 3] no. 11. p. 36-37.

DESCRIPTORS: Mathematics, *Models (Simulation), Electrical networks, *Equations, Algebra, Matrix algebra.

Rabinovich, Yu. L.
THE BEHAVIOR ON INFINITY OF THE SOLUTIONS TO SECOND ORDER LINEAR DIFFERENTIAL EQUATIONS. [1962] [14]p.
Order from OTS or SLA $1.60 63-10306

Trans. of Moscow U. Vestnik [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 5, p. 53-63.

DESCRIPTORS: *Differential equations, Inequalities, Equations, Integral equations, *Transformations (Mathematics), Integration.

Samedova, S. A.
EXISTENCE OF PERIODIC LIMITING REGIMES FOR A NONLINEAR SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS, tr. by W. S. Loud. Jan 63 [3]p. 4 refs.
Available from AIAA in its Journal, v. 1, no. 1, $5.00

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR [Baku]. Izvestiya. Seriya Fiziko-Matematicheskikh i Tekhnicheskikh Nauk, 1960, no. 2, p. 27-33.

DESCRIPTORS: Differential equations, *Nonlinear differential equations, Matrix algebra, Transformations (Mathematics).

Smogorzhevskii, A. S.
THE RULER IN GEOMETRICAL CONSTRUCTIONS, tr. by H. Moss. 1961, 1v.
Order from PP
Trans. of mono. [Lineika v Geometricheskikh Postroeniyakh, Moscow, 1957, 62p.].
DESCRIPTORS: *Geometry, *Geometric forms, Construction, Tools.

Tsetlin, M. L.
GAME BETWEEN A FINITE AUTOMATION AND A PARTNER USING MIXED STRATEGY. 17 May 63, 5p. 6 refs. JPRS: 19243.
Order from OTS $0.50 63-21840

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 1, p. 52-53.

DESCRIPTORS: *Game theory, Probability, Mathematics

Computing Devices

Golubev, L. A.
METHOD OF CARRYING OUT DIVISIVE OPERATIONS. 5 Mar 63 [4]p. FTD-TT-62-1501.
Order from OTS or SLA $1.10 63-19411

Unedited rough draft trans. of Russian patent 145069(698097/26) 17 Feb 61.

DESCRIPTORS: *Digital computers, *Arithmetic operations.

A method of dividing without restoring the balance in digital computers is described. For the purpose of combining subtraction (addition) with the displacement of the divisor, the divisor is written into the annular moving register, and to analyze the moving sign of the balance, a computing device controlled by a cadence counter is used. (Author)

Office of Technical Services, Dept. of Commerce, Washington, D. C.
COMPUTERS. Feb 63, 37p. 808 refs. OTS Selective Bibliography SB-472, suppl. 1.
Order from OTS $0.10 OTS SB-472 Suppl. 1

DESCRIPTORS: *Bibliographies, *Computers, *Digital computers.

Lists 808 reports and translations on Computers added to the OTS collection during the period September 1961 to February 1963. Covers research on digital and other computers, high-speed computer research, computer reliability studies, computer programming, applications to mathematics, word coding techniques for computers, computer aided engineering designs, computers in automation and industrial planning among other subjects.

MECHANICS

Bogomolov, S. I.
EFFECT OF TRANSVERSE VIBRATIONS OF A TURBINE DISC ON BLADE VIBRATIONS. [1962] [24]p. 2 refs. [DSIR] NLL M. 3579.
Order from OTS or SLA $2.60 62-24681

Trans. of Politekhnicheskii Institut, Kharkov. Trudy (USSR) 1958, v. 14, no. 2, p. 23-41.

DESCRIPTORS: *Vibration, Disks, *Turbine parts, *Turbine blades, Differential equations.

Theoretical investigation and analysis of sand patterns shows that the effect of transverse vibrations of a disc on blade vibration consists in the following: (1) blades situated strictly centrally between two adjacent nodal radii of the disc execute flexural axial vibrations; (2) blades through which the nodal radii pass execute torsional vibrations; (3) all remaining blades execute flexural-torsional vibrations despite the coincidence of the centres of torsion and gravity through the blade cross sections. The nearer the blade is situated to a nodal radius, the greater its torsional vibrations and the smaller the flexural vibrations, and vice versa; and (4) vibrations of bladed discs with a given number of nodal diameters are possible with first, second etc. frequencies. Vibrations at the higher frequencies for a given number of nodal diameters occur with nodes on the blades. (Author)

Geckeler, J. W.
PLASTIC YIELDING TO BUCKLING OR AXIAL COMPRESSION OF HOLLOW CYLINDER WALLS AND A NUMBER OF OTHER FOLDING SYMPTOMS AT SHELLS AND PLATES. [1962] 21p. (figs. omitted) 10 refs.
Order from SLA $2.60 63-10679

Trans. of Zeitschrift für Angewandte Mathematik und Mechanik (Germany) 1928, v. 8, no. 5, p. 341-352.

DESCRIPTORS: *Plasticity, Deformation, Compressive properties, *Cylindrical bodies, Structural shells, Sheets, *Elasticity, Mathematical analysis, Differential equations, Functions.

Kozhevnikov, D. V.
SOME MECHANICAL PROBLEMS OF OBLIQUE-ANGLE STEEL CUTTING (Nekotorye Voprosy Mekhaniki Protsessa Kosougol'nogo Rezaniya Stali) tr. by R. J. Zatorski. [1962] [23]p. (foreign text included) 9 refs. [CSIRO] Trans. no. 5934.
Order from OTS or SLA $2.60 63-13598

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Mashinostroenie (USSR) 1960, no. 6, p. 139-148.

DESCRIPTORS: *Mechanics, *Cutting tools, *Steel, Dies, Design, Lubrication, Cutting fluids, Carbon compounds, Chlorides, Tests, Material removal.

This paper compares the results of experiments in oblique angled steel cutting without lubrication and with carbon tetrachloride which alters sharply the friction conditions on the frontal face of the cutting tools. This comparison provided a new explanation of the behaviour characteristics of cutting-force components, chip contraction and the angle of chip flow along the rake face with changes in the angle of inclination of the cutting edge. An experimental test was carried out for the system of forces on the inclined cutting tool and of formulae for the calculation of the effective cutting angle. The application of more accurate experimental methods disclosed a number of errors in the work of other authors. (Author)

Kuznetsov, L. I.
EQUATIONS OF THE PRECESSIONAL THEORY OF GYROSCOPES. Jan 63 [4]p. 2 refs.
Available from AIAA in Its Journal, v. 1, no. 1, $5.00.

Trans. of Leningrad U. Uchenye Zapiski (USSR) 1960, no. 280, p. 25-30.

DESCRIPTORS: *Gyroscopes, *Partial differential equations, Motion, Rotation, Moments, *Equations of motion.

Litvin-Sedoy, M. Z.
CONTROL OF ANGULAR MOTION OF A BODY BY MEANS OF ROTOR [K Mekhanike Upravleniya Uglovym Dvizheniyem Tela s Pomoshch'yu Rotorov]. Presented at All-Union Congress on Theoretical and Applied Mechanics (no. 1) 2 Feb 60. Jan 63 [3]p. 5 refs. Available from AIAA in Its Journal, v. 1, no. 1, $5.00.

Trans. of Moscow U. Vestnik. [Seriya 1: Matematika, Mekhanika] (USSR) 1960 [v. 15] no. 6, p. 72-[78]. Another trans. is available from OTS or SLA $1.60 as 61-23055, JPRS-9264, 15 May 61 [18]p.

DESCRIPTORS: Control systems, Motion, *Bodies of revolution, *Spheres, Rotation.

For abstract see Technical Translations 6: 201, 1961.

Rodionov, E. M.
GYROSCOPE DRIFT CAUSED BY FRICTION OF THE GIMBAL BEARINGS AND REDUCTION OF THIS DRIFT BY THE USE OF ROTATING BEARINGS. 4 Mar 63 [18]p. FTD-TT-62-1900.
Order from OTS or SLA $1.60 63-19413

Unedited rough draft trans. of [Aviatsionnyi Tekhnologicheskii Institut] Moscow. Trudy (USSR) 1961, v. 52, p. 33-44.

DESCRIPTORS: *Gyroscopes, *Drift, Reduction, Gimbals, *Bearings, Friction, Rotation, Gyro stabilizers.

This article is devoted to a consideration of one of the causes of unsteady drift, namely, the rolling-resistance moments of the gimbal bearings, and an evaluation is given of the effectiveness of methods of reducing the drift by oscillatory rotations of the outer rings of the gimbal bearings.

Rozenberg, A. M. and Kufarev, G. L.
DETERMINATION OF THE DEGREE OF PLASTIC DEFORMATION OF A METAL DURING CUTTING (Opredelenie Stepeni Plasticheskoi Deformatsii Metalla pri Rezanii) tr. by P. Thistlethwaite. [1962] [16]p. (foreign text included) 5 refs. [CSIRO Trans.] no. 5931.
Order from OTS or SLA $1.60 63-19103

Trans. of Vestnik Mashinostroeniya (USSR) 1958, v. 38, no. 6, p. 49-52.

DESCRIPTORS: *Creep, Deformation, *Metals, Copper, Knives, *Material removal, Cutting tools.

Zemlyanskii, V. A.
CALCULATIONS ON CUTTING TOOL HEADS (Raschet Struzhkolomov) tr. by P. Thistlethwaite. [1962] [28]p. (foreign text included) 4 refs. [CSIRO Trans.] 5933.
Order from OTS or SLA $2.60 63-19105

Trans. of Vestnik Mashinostroeniya (USSR) 1957, v. 37, no. 6, p. 57-62.

DESCRIPTORS: *Mechanics, *Cutting tools, Dies, Mechanical properties, Material removal, Materials, Mathematical analysis, Design, Metals.

Aerodynamics and Pneumatics

JOURNAL OF ENGINEERING, 1962, VOL. 2, NO. 1: SELECTED ARTICLES. 29 Mar 63 [45]p. 27 refs. FTD-TT-62-1694.
Order from OTS or SLA $4.60 63-19329

Unedited rough draft trans. of Inzhenernyi Zhurnal (USSR) 1962, v. 2, no. 1, p. 79-86, 163-170, 175-181.

DESCRIPTORS: *Engineering, *Turbulent boundary layer, Porous materials, *Ionization, *Recombination reactions, Delta wings, *Aerodynamic characteristics, Ailerons, Flaps, Aerodynamic control surfaces, *Supersonic flow.

Contents:
Turbulent boundary layer with pressure gradients on a porous surface, by A. I. Tolstykh
The processes of ionization and recombination in hot air, by V. A. Bronshten
Aerodynamic characteristics of delta wing with deflected aileron, flap, and other secondary control surfaces in supersonic flow, by Yu. I. Krasil'nikov.

Ivanov, A. N.
CAVITATION FLOW PAST AIRFOILS. Jan 63 [3]p. 3 refs.
Available from AIAA in Its Journal, v. 1, no. 1, $5.00.

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1960, no. 6, p. 117-120.

DESCRIPTORS: *Cavitation, *Airfoils, Fluid flow, Angle of attack, Integral equations.

Hydrodynamics, Hydraulics, and Hydrostatics

ARRANGEMENT FOR DETERMINING THE VISCOSITY OF LIQUIDS. [1961] 6p.
Order from RIS $10.00 RIS C-179

Trans. of Belgian patent application 596 418, by VEB Filmfabrik AGFA Wolfen, appl. 26 Oct 60 (priority German patent application 12 May 60, no. V 18601 IX/42 1, invention also object of a patent application, not yet granted, filed in the German People's Republic 26 Apr 60, no. WP 42 1/67 335).

DESCRIPTORS: *Liquids, *Viscosity, Damping, Oscillation, Surface area.

INSTITUTE FOR DEVELOPMENT OF WATER RESOURCES "JAROSLAV CERNI". TRANSACTIONS, 1962, VOL. 9, NO. 23, tr. ed. by Elizabeth Tornquist. 1962 [70]p. 3 refs. PL-480 Int.
Order from OTS $0.75 62-19470/2

Trans. of Institut za Vodoprivredu "Jaroslav Cerni". Saopstenja (Yugoslavia) 1962, v. 9, no. 23.

DESCRIPTORS: *Hydrology, *Hydraulic research, Drainage, Hydrodynamics, Silt, Hydraulic models, Inland waterways, *Water supplies.

Contents:
Memorial to Jaroslav Cerni, by M. Vercon
Some quantitative aspects of turbulent flow, by Z. Vladisavljevic-Medak
Low waters on the courses in Serbia, by D. Marjanovic
Methods of treating a flow in a double-layer soil, by M. Vukovic
The separation structure for protection of storage against silting, by S. Jovanovic
Model testing of the water capture on the Danube-Tisa-Danube hydrosystem near Bezdan, by M. Miloradov
Analyses of torrential streams in the Velika Morava river basin, by R. Vukotic
A review of the works of the Institute for Development of Water Resources "Jaroslav Cerni", for the years 1959, 1960 and 1961, by Z. Vladisavljevic.

Kapitsa, P. L.
FREE FLOW [Volnovoe Techenie Tonkikh Sloev Vyazkoi Zhidhosti. I. Svobodnoe Techenie]. Pt. 1 of Wave Flow of Thin Layers of a Viscous Liquid. [1962] 17p. 4 refs.
Order from OTS or SLA $1.60 AEC-tr-5514

Trans. of Zh[urnal] Eksperim[ental'noi] i Teor[eticheskoi] Fiz[iki] (USSR) 1948, v. 18, no. 1, p. 3-18.
Other translations are available from OTS or SLA $2.60 in 61-23317, DSIR LLU M.2751 [1961] 23p.; $1.60 in 61-27621, DSIR LLU M.3249; $1.60 as 62-13142, DSIR NNL M.4296, Sep 60, 15p.; from ATS $27.50 as ATS-85P62R [1962] 16p.; also available from INSDOC as T.832 (a).

DESCRIPTORS: Liquids, Viscosity, *Fluid flow, Wave analysis, Propagation.
A theoretical study has been carried out on the problem of flow of thin layers of viscous liquid under the influence of a constant bulk force, taking surface tension into account. An approximate solution of the flow equation has been found; this solution showed that the wave regime detected experimentally by a number of authors is more stable than the laminar regime. The form of the wave profile, the phase velocity, and the amplitude have been obtained. The theoretical values found for the critical Reynolds number Re_c at which wave regime appears coincide with the experimental value. The rapid propagation of a dye color along a liquid stream, observed by Friedman and Miller, is explained quantitatively by the wave character of the flow. (Author)

Kosterin, S. I., Polyakov, V. V. and others.
HYDRAULIC RESISTANCE OF STEAM-WATER FLOW IN VERTICAL UNHEATED PIPES. [1963] 7p.
Order from ATS $12.25 ATS-25Q67R

Trans. of Inz[henerno]-Fiz[icheskii] Zh[urnal] (USSR) 1962, v. 5, no. 7, p. 3-10.

DESCRIPTORS: *Steam, Steam pipes, Water, *Fluid mechanics, Fluid flow.

Suquet, F. and Wallet, A.
BASIC EXPERIMENTAL WAVE RESEARCH. Paper from joint meeting of International Association for Hydraulic Research (no. 5) and Hydraulics Division, American Society of Civil Engineers (no. 2) Minneapolis, 1-4 Sep 53. [1962] [37]p. (foreign text included) 13 refs.
Order from SLA $3.60 62-16651

Trans. of mono. Minnesota International Hydraulics Convention, Minneapolis, 1-4 Sep 53. Proceedings, 1953, p. 173-191.

DESCRIPTORS: *Hydraulic research, *Water waves, *Hydrodynamics, Hydraulic models, Measurement, Photography, Theory, Numerical methods and procedures.

Vid, V. E.
A POLE-INTEGRATOR FOR MEASURING THE MEAN VELOCITY OF A WATER CURRENT ON THE VERTICAL OF A HYDROMETRIC SECTION LINE. [1962] [3]p. [DSIR] NLL M.10000.
Order from OTS or SLA $1.10 63-15220

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 3, p. 55-57.

DESCRIPTORS: *Hydrodynamics, Ocean currents, River currents, Velocity, Measurement, Instrumentation, *Integrators.

METALLURGY

HIGH-TEMPERATURE TESTING OF METALS. 22 Apr 63, 28p. JPRS: 18808.
Order from OTS $0.75 63-21622

Trans. of #Zavodskaya Laboratoriya (USSR) 1963, v. 29, no. 3, p. 364-379.

DESCRIPTORS: *Metals, Test methods, *Test equipment, *High temperature research, Mechanical properties, Creep, Tensile properties, *Heat resistant metals and alloys, Ceramic materials, Refractory materials.

Contents:
Methods and testing equipment for studying the mechanical properties of metals at high temperatures, by G. S. Pisarenko
Equipment for mechanical testing at temperatures up to 2000°C, by N. I. Mikheev and others
Instrument for creep testing at high temperatures in a vacuum or inert medium, by V. G. Govorkov and others
Equipment for tensile testing of refractory metals at high temperatures in a vacuum, by E. M. Savitskii and V. P. Vinokurov

MATERIAL HIGHLY RESISTANT TO HEAT AND SCALING, tr. by J. B. 13 Dec 62, 6p.
Order from OTS or SLA $1.10 63-13740

Trans. of Austrian patent 181,431, cl. 40b, 7, by Metallwerk Plansee G. m. b. H., appl. 6 Oct 52, beginning of pat. term 15 Aug 54, pub. 25 Mar 55.

DESCRIPTORS: *Heat resistant metals and alloys, Scale, Mechanical properties, Resistance (Electrical).

The patent pertains to material highly resistant to heat and scaling, on the basis of molybdenum-silicon alloys, characterized by a content of one or more high-melting transition metals of groups 4, 5 and 6 of the periodic system, such as titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium and tungsten, in a total quantity of up to 45%. The material is characterized in that the transition metals are contained entirely or in part as compounds, preferably as nitrides, borides, silicides and oxides, separately or in mixtures. (Author)

METALLURGICAL REPORTS FROM ZAVODSKAYA LABORATORIYA. 24 Apr 63, 20p. 23 refs.
JPRS: 18889.
Order from OTS $0.75 63-21668

Trans. of #Zavodskaya Laboratoriya (USSR) 1963, v. 29, no. 2, p. 189-197, 219-221.

DESCRIPTORS: *Metallurgy, Reports, *Metallic crystals, Single crystals, Aluminum, Production, Chemistry, Cutting tools, Metals, Deformation, *Crystal lattice defects, Iron, Steel, *Ceramic materials, *Bonding, Mechanical properties, Tensile properties.

Contents:
Cutting single crystals of aluminum without deformation, by G. V. Indenbaum and Yu. D. Chistyakov
Experience in revealing dislocations in deformed metals, by V. S. Ivanova and others
Strength of a metal-to-ceramic bond, by R. M. Manelis.

REDUCTION TEMPERATURE OF METALS AND HEAT RESISTANCE OF ALLOYS. 16 Apr 63 [23]p. 24 refs. JPRS: 18731.
Order from OTS $0.75 63-21589

Trans. of Institut Stali, Moscow. Sbornik (USSR) 1958, v. 38, p. ##79-87 and 427-432.
##Other translations are available from HB as HB-4597, $7.25 and from OTS or SLA $15.50 in 61-27034, MCL-595, Nov 60 [234]p.

DESCRIPTORS: *Reduction (Chemistry), *Metals, Carbon, *Oxides, Temperature, Tests, Chemical reactions, Heat treatment, *Heat-resistant metals and alloys, Scale

Contents:
##On the initial temperatures of reduction of oxides of metals with carbon, by V. P. Elyutin and others
Effect of chemical heat treatment on the heat resistance of alloys, by V. P. Elyutin and others

SOVIET DEVELOPMENTS IN METALLURGY. 24 Apr 63, 25p. 5 refs. JPRS: 18870.
Order from OTS $0.75 63-21659

Trans. of Svarochnoe Proizvodstvo (USSR) 1962, no. 12, p. 30-34 and Tsvetnye Metally (USSR) 1963 [v. 36] no. 1, p. 54-57.

DESCRIPTORS: *Metallurgy, Aluminum, Zinc, *Brazing, Erosion, *Ammonium radicals, *Tungstates, Production.

Contents:
The interaction of certain brazes with SAP-1 and ADl aluminum, by V. L. Grishin
Production of ammonium paratungstate in acid-free autoclave solutions, by K. Ya. Shapiro and others.

SOVIET REPORTS ON METALLURGY, NOV-DEC 62. 22 Apr 63, 41p. 42 refs. JPRS: 18817.
Order from $1.25 63-21627

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1962, no. 6, p. 90-111.

DESCRIPTORS: *Metallurgy, *Grain structures (Metallurgy), *Fatigue (Mechanics), Metals, Alloys, *Crystal lattice defects, Dislocations, Deformation, Lattices, Creep, *Chromium, Casting.

Contents:
The role of grain boundaries in the development of fatigue, by V. S. Ivanova
Dislocation structure of some deformed metals and alloys, by L. N. Guseva and A. A. Babareko
The annihilation of vacancies in the creep process as a factor in increasing heat-resistance, by V. N. Gulyaev
Observation of dislocations in cast and deformed polycrystalline chromium, by D. A. Prokoshkin and others

Andonev, S. M.
EXPERIENCE IN DESIGNING AND OPERATING EVAPORATIVE (HOT) COOLING OF METALLURGICAL FURNACES, tr. by R. C. Murray. June 58 [17]p. [BISI] Trans. 988; [Trans.] no. 4892; [DSIR] NLL M. 4086.
Order from OTS or SLA $1.60 62-24101

Trans. of Stal' (USSR) 1958 [v. 18, no. 3] p. 271-280.

DESCRIPTORS: *Furnaces, *Metallurgy, Evaporation, *Cooling, Cooling and ventilating equipment, Design, Operation, Open hearth furnaces.

Belous, N. N.
WELDING OF GEARS UNDER PROTECTION OF CARBON DIOXIDE. Oct 57 [9]p. 5 refs. GKN Trans-563; BISI Trans. no. 729; [DSIR] NLL M. 4176.
Order from OTS or SLA $1.10 62-13185

Trans. of Svarochnoe Proizvodstvo (USSR) 1956, no. 3, p. 20-22.

DESCRIPTORS: *Welding, Gears, Production, *Carbon compounds, *Dioxides, Welds, Steel, Mechanical properties.

It has been confirmed that it is possible to weld low-carbon killed and rimming steels type St. 3 and low-alloy steels type NL-2 under protection of carbon dioxide, and the resulting welds show satisfactory properties. Welding under the protection of carbon dioxide shows advantages when compared with semi-automatic welding under a layer of flux (i.e. the possibility of direct welding, the exactness of the deposited layer, absence of the necessity of cleaning slag and flux from the welds. Other things being equal the productivity of welding under protection of carbon dioxide is higher than productivity of welding under a layer of flux. (Author)

Chernov, N. N. and Domnitskii, I. F.
CONTROL OF GAS FLOW IN THE BLAST FURNACE, tr. by R. Hennefeld. [1962] [15]p. 2 refs. Trans. no. CRL/T. 846; [DSIR NLL] M. 3662.
Order from OTS or SLA $1.60 62-25272

Trans. of Stal' (USSR) 1956 [v. 16] no. 5, p. 402-408.

DESCRIPTORS: *Blast furnaces, *Gas flow, Control, Carbon dioxide, Distribution, Ores (Metal sources).

A gas flow control test in KMK blast furnaces showed that with optimum distribution of gas flow in the stack, the carbon dioxide content in the central zone of the cross section should be 2-3% lower than at the periphery. Maintaining the axial zone "open" is necessary for increasing the CO_2 content in the intermediate zone, for reducing the gas pressure and for ensuring a supply of gas from the central part to those parts of the stack having the maximum ore charge. (Author)

Colombier, L.
AUTOMATIC GAMMASCOPIC EXAMINATION OF HOT BLOOMS, PT. III. Apr 63.
Order from BISI £1 15s BISI-3196

Trans. of Cercle d'Études des Métaux. Bulletin (France) 1962, v. 8, Mar, p. 351-356.

DESCRIPTORS: Metals, *Non-destructive testing, Automation, *Gamma-ray spectroscopy, Rolling mills.

Dem'yanchuk, A. S. and Ryabushko, O. P.
SPECTROANALYSIS OF HIGH-SILICON ALUMINIUM ALLOYS AND WELDS. July 59 [6]p. 6 refs. [GKN] Trans. 867; BISI Trans. 1347; [DSIR] NLL M.4734.
Order from OTS or SLA $1.10 62-24233

Trans. of Avtomaticheskaya Svarka (USSR) 1958 [v. 11] no. 10, p. 86-89.

DESCRIPTORS: *Spectroscopy, Analysis, *Silicon alloys, *Aluminum alloys, *Welds, Iron alloys, Manganese alloys, Copper alloys, Zinc alloys.

For abstract see Technical Translations 2: 590, 1959.

Diepschlag, Ernst.
CENTRIFUGE ARRANGEMENT FOR FLUID METAL, tr. by J. R. -P. 14 Dec 62, 6p. (fig. omitted).
Order from OTS or SLA $1.10 63-13749

Trans. of German patent 693,302, cl. 31c, gr. 33/02, pat. from 5 July 38, announced 13 June 40, pub. 5 July 40.

DESCRIPTORS: *Centrifuges, *Liquid metals, Impurities, *Slags, Gases, Design.

Efroimovich, Yu. E., Kotikov, A. N. and others.
A COMPUTER FOR CONTROLLING THE PARAMETERS OF AN ARC FURNACE [Vychislitel'noe Ustroistvo dlya Upravleniya Rezhimom Dugovoi Pechi] tr. by Miles de O. Tollemache. Feb 59 [15]p. 5 refs. [BISI] Trans. 1162; [Trans.] no. 5147; [DSIR] NLL M. 4306.
Order from OTS or SLA $1.60 62-24191

Trans. of #Elektrichestvo (USSR) 1958, no. 5, p. 15-20. Another trans. is available from MT $15.00 as MT Trans-43, Jan 60.

DESCRIPTORS: *Electric furnaces, *Computers, Control systems, Operation, Energy.

Gladunov, S. D.
CHANGING CHARGING GEAR OF BLAST-FURNACES AT THE NOVO TAGIL PLANT IN RUSSIA IN TWO DAYS, tr. by R. Sewell. July 57 [6]p. [BISI] trans. 550; Trans. no. 4344; [DSIR] NLL M. 4150.
Order from OTS or SLA $1.10 62-24157

Trans. of Stal' (USSR) 1952 [v. 12] no. 12, p. 1134ff.

DESCRIPTORS: *Blast furnaces, Maintenance, Labor, Management engineering, Gears.

Golosman, K. M.
METALLURGICAL HEAT TREATMENT TECHNOLOGICAL PROGRESS IN FURNACE ECONOMY IN ROLLING MILLS. Apr 63.
Order from BISI £5 5s BISI-911

Trans. of Stal' (USSR) 1958 [v. 18, no.2] p. 171-178.

DESCRIPTORS: *Heat treatment, Furnaces, Economics, *Rolling mills.

Gruverman, L. G. [and Andreev, A. M.].
RUSSIAN EXPERIENCE IN THE AUTOMATIC CONTROL OF WHEEL PLANT FURNACES, tr. by R. Sewell. July 57 [16]p. [BISI] Trans. 552; Trans. no. 4351; [DSIR] NLL M. 4148.
Order from OTS or SLA $1.60 62-24155

Abridged trans. of Stal' (USSR) 1956 [v. 16] no. 12, p. 1103-[1105].

DESCRIPTORS: *Furnaces, Control systems, Automatic, *Industrial plants, *Metallurgy.

Gubarev, A. G.
NEW DESIGN OF HIGH STABILITY HOT-BLAST VALVE, tr. by R. Sewell. July 57 [6]p. [BISI] Trans. 549; Trans. no. 4294; [DSIR] NLL M. 4151.
Order from OTS or SLA $1.10 62-24158

Trans. of Stal' (USSR) 1955 [v. 15] no. 11, p. 1037-1038.

DESCRIPTORS: *Valves, Heat, Air blast, Design, Stability, *Blast furnaces, Steel, Casting.

The new valve is distinguished in that the internal recesses of the supporting ring has continuous annular screens separating it into equal parts. As a result, a constant speed of circulation of the cooling water in all parts of the ring is obtained and this prevents the deposition of suspended particles which are being carried outwards through the exhaust nozzles.

Jeancolas, M., Lara, G. Cohen de, and Hanf, H.
CONTRIBUTION TO THE STUDY OF THE LAYOUT OF INLET SYSTEMS USED IN SAND MOULDING. Apr 63.
Order from BISI £5 15s BISI-2666

Trans. of Fonderie (France) 1961 [no. 189]p. 385-396.

DESCRIPTORS: Pressure, *Sand, *Molding, Fluid flow, *Casting, Hydraulics.

Kalinina, Z. M.
COMPARISON OF METAL CONTROL FOR HAIR LINE CRACKS IN BILLETS AND FINISHED PRODUCTS. May 58 [9]p. 1 ref. GKN Trans-649; BISI Trans. no. 878 [DSIR] NLL M. 4107.
Order from OTS or SLA $1.10 62-24114

Trans. of Stal' (USSR) 1957 [v. 17] no. 3, p. 261-263.

DESCRIPTORS: *Steel, Castings, *Crazing, Quality control, Standards, Tests, Production, Forging.

Comparison of the results of sustained parallel control of metals for hair line cracks in billets (using stepped specimens) and in finished components (by means of defectoscope) revealed complete lack of any relation between the data obtained. It is therefore suggested that the control of billets for hair line cracks by means of visual inspection of stepped specimens should be discontinued since it is not relevant to the characteristics of the cast metal. (Author)

Lenhardt, Paul.
INFLUENCES ON THE STRUCTURE OF GALVANIC PRECIPITATES. [1962] 18p. (figs. omitted).
Order from SLA $1.60 62-18319

Trans. of [Galvanotechnik] (West Germany) 1957 [v. 48] no. 12, p. 528-535.

DESCRIPTORS: Metal coatings, Electrodeposition, Crystal structure, Surface properties, Precipitates.

Matting, A. and Steffens, H. -D.
THE SCIENTIFIC BASES OF METAL SPRAYING. Apr 63.
Order from BISI £6 BISI-3158

Trans. of Forschungsgesellschaft Blechverarbeitung e.V. Mitteilungen (West Germany) 1962, no. 16/17, p. 220-230.

DESCRIPTORS: *Metal coatings, *Flame spraying, Powder metallurgy, *Plasma jets, Mechanical properties, Stresses.

Mazel', A. G. and Khrenov, K. K.
EXTERNAL CHARACTERISTICS OF THE CURRENT SOURCE IN WELDING UNDER A CARBON DIOXIDE SHIELD. Jan 59 [11]p. 5 refs. GKN Trans-769; BISI Trans. no. 1115; [DSIR] NLL M.4312.
Order from OTS or SLA $1.60 62-24195

Trans. of Svarochnoe Proizvodstvo (USSR) 1957, no. 8, p. 31-34.
Another trans. is available from HB $4.90 as HB-4463, Jan-Feb 59.

DESCRIPTORS: *Electric currents, *Motor generators, *Arc welding, Carbon compounds, Dioxides, Electrodes, Polarization, Operation.

For abstract see Technical Translations 1: 227, 1959.

Moiseevich, S. I. and Ozhiganov, I. N.
QUALITY OF WATER IN THE CYCLIC WATER SUPPLY SYSTEM AT THE MAKEEV PLANT. July 58 [12]p. 3 refs. GKN Trans-702; BISI Trans. no. 985; [DSIR] NLL M. 4085.
Order from OTS or SLA $1.60 62-24100

Trans. of Stal' (USSR) 1958, v. 18, no. 4, p. 379-383.

DESCRIPTORS: *Water, Quality control, Control systems, *Industrial plants, Cooling, Fouling, Water supplies, *Metallurgy.

Topics include a description of the water supply system. The quality of the water in the various parts of the system, and methods of preventing fouling.

Paton, E. and Medovar, B. I.
ROLE OF ELECTRON BEAM AND ELECTROSLAG REFINING IN SPECIAL WELDMENTS: ON IMPROVING THE QUALITY OF STEELS AND ALLOYS FOR WELDMENTS OF SPECIAL DESIGNATION. 2 Apr 6 [11]p. (2 figs. omitted) 11 refs. JPRS: 18490.
Order from OTS $0.50 63-21474

Trans. of #Avtomaticheskaya Svarka (USSR) 1962 [v. 15] no. 11, p. 1-7.

DESCRIPTORS: *Electron beams, *Electroslag process, *Welding, Smelting, *Steel, Alloys, Austenite, Mechanical properties, Welds.

Pozdnyak, N. Z.
INTER-COLLEGE ALL-UNION SCIENTIFIC CONFERENCE ON POWDER METALLURGY (NO. 1) [KUYBYSHEV]. 4 Feb 63 [12]p. FTD-TT-62-1837.
Order from OTS or SLA $1.60 63-19080

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1962 [v. 5] no. 3, p. 164-167.

DESCRIPTORS: *Conferences, *Powder metallurgy, Sintering, Powder alloys, Production, Physical properties, Grain structures (Metallurgy), Powders, Metals, Cermets.

Rabotnov, B. A.
THE IMPACT STRENGTH OF THE METAL OF THE HEAT-AFFECTED ZONE OF WELDED JOINTS IN HIGH-CHROME STEEL [Udarnaya Vyazkost Metalla Zony Termicheskogo Vliyaniya Svarnykh Soedinenii Vysokokhromistoi Stali] tr. by Miles de O. Tollemache. Feb 59 [7]p. [BISI] Trans. 1165; [Trans.] no. 5088; [DSIR] NLL M. 4305.
Order from OTS or SLA $1.10 62-24190

Trans. of Avtom[aticheskaya] Svarka (USSR) 1958, v. 11, no. 9, p. 20-23.
Another trans. is available from MT, Jan 60.

DESCRIPTORS: *Steel, *Chromium alloys, *Welds, Welding, Mechanical properties.

Data are given on the impact strength of the metal in various sections of the heat-affected zone of welded joints in mark 1Kh13 and 2Kh13 (0.1-0.25% C +13% Cr). It is shown that the most brittle sections of the heat-affected zone are situated at a distance of 1-3 mm. (0.03937-0.1181 in.) from the boundary of the fusion zone. (Author)

Rossi, Irving.
IMPROVEMENTS IN MOLDS FOR CONTINUOUS CASTING OF METALS, ESPECIALLY STEEL, tr. by J. B. 30 Jan 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-15443

Trans. of French patent 1,064,849, gr. 8, cl. 2, appl. 16 Oct 52, granted 30 Dec 53, pub. 18 May 54,

DESCRIPTORS: *Steel, *Casting, Metals, *Molding, Electric insulation.

The purpose of the invention is to improve molds for continuous casting of metals, containing a vertical passage for the casting, characterized by the following points: (1) One or more induction coils are arranged on a level with the mold and are supplied with electric current in such manner that the still liquid metal of the casting has a tendency to rise in the axis of the mold and to descend near the inner walls of this mold. (2) The mold consists of several portions joined together, layers of electrically insulating material being inserted between the portions. (3) The mold is cooled by an internal circulation of cooling fluid, the cooling conduits being divided into groups separated from each other by layers of electrically insulating material. (Author)

Savchenkoi, V. A.
[THE MEANS OF COMBATTING THE POROSITY AND THE FORMATION OF WELD CRACKING ENCOUNTERED IN FLUX-SHIELDED AUTOMATIC ALUMINUM WELDING] (Bor'ba s Porami i Goryachimi Treshchinami pri Avtomaticheskoi Svarke Alyuminiya). [1962] [14]p. 6 refs.
Order from OTS or SLA $1.60 62-20132

Trans. of Svarochnoe Proizvodstvo (USSR) 1956, no. 10 [p. 9-13].

DESCRIPTORS: *Aluminum, *Welding, Welding fluxes, *Welds, Fracture (Mechanics), Porosity.

The mechanical properties of aluminum joints made by flux-shielded automatic welding are not different from those made by gas welding, manual arc welding, and automatic argon-shielded arc welding. The principal factor which determines the density of the aluminum welds appears to be the rate of crystallization. The relationship between porosity and welding speed has been established. For the prevention of crystallization cracks in the welding of high-purity aluminum (AV1, AV2) it is recommended to modify the weld metal with titanium in amounts of 0.05-0.08%. Titanium refines the structure of the weld metal and breaks up the eutectic which collects at the grain boundaries of the aluminum and thus prevents the formation of cracks. For the welding of high-purity aluminum, the use of an electrode wire containing 0.15-0.20% Ti is recommended. (Author)

Savitskii, E. M., Baron, V. V., and Tao, Tsu-tsun.
INFLUENCE OF RARE-EARTH METALS ON PLASTICITY OF CAST MOLYBDENUM. [1962] 4p. (figs. tables [refs] omitted).
Order from OTS or SLA $1.10 63-10108

Trans. of [Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo] 1962, no. 1, p. 156-159.

DESCRIPTORS: *Rare earth elements, *Plasticity, Coating alloys, *Molybdenum, Mechanical properties, Microstructure, Analysis, Metals.

Small additions (0.05 to 0.15%) of mischmetal, lanthanum, cerium, praseodymium, and neodymium lower the hardness and, especially, the ductile to brittle transition temperature of cast molybdenum of technical purity. This effect is brought about by the refining effect of rare-earth elements on the alloys of molybdenum as a result of the high chemical activity of the rare-earth element. The appearance of a second phase in alloys is a condition for the opposite phenomenon to a lowering of the ductile to brittle transition temperature. The addition of 0.08% La, 0.01% Nd, and 0.03% Pr to the cast technical molybdenum resulted in a better influence on the latter and lowered the transition temperature approximately 500°C. The transition temperature of these alloys was close to room temperature. In spite of the fact that small additions of rare-earth elements somewhat reduce the transition temperature of the technical molybdenum, these alloys in the cast state still could not be cold rolled. According to the data of the mechanical tests and the microstructural analysis, the solubility of the rare-earth elements in the molybdenum was less than 0.1%. (Author)

Schlötterer, H.
ABOUT THE DEFINITION AND MEASUREMENT OF BRIGHTNESS ON METAL SURFACES. II. BRIGHTNESS TEST AND SCATTER CURVES. [1962] 13p. (figs. omitted) 7 refs.
Order from SLA $1.60 63-10147

Trans. of Metalloberfläche (West Germany) 1962, v. 16, no. 3, p. 81-84.

DESCRIPTORS: *Metals, Surfaces, Brightness, Measurement, Light, Scattering, Electron microscopy, *Optical properties.

Sedykh, V. S., Deribas, A. A. and others.
EXPLOSION WELDING (Svarka Vzryvom). Mar 63 [14]p. 9 refs. NASA Technical Trans. F-140; N63-13539.
Order from OTS $0.50 63-11600

Trans. of #Svarochnoe Proizvodstvo (USSR) 1962, no. 5, p. 3-6.

DESCRIPTORS: Metals, *Welding, *Explosive forming, *Explosives, Jets, Welds, Metallography, Microstructure

The possibility of welding metals of the same and different types, and also of obtaining welded joints of large area, by means of an explosion has been experimentally established. The experiments show that the types of explosives used are of major importance, the most suitable for this purpose being low-density explosives in granular form. (NASA abstract)

Storozhev, M.
ELEMENTARY THEORY OF PLASTIC DEFORMATION. Feb 59 [12]p. 6 refs. GKN Trans-798; BISI Trans. no. 1188; [DSIR] NLL M.4324.
Order from OTS or SLA $1.60 62-24202

Trans. of Vestnik Mashinostroeniya (USSR) 1948 [v. 28] no. 5, p. 43-48.

DESCRIPTORS: Theory, *Creep, *Deformation, *Hot-working, Metals, Stresses, Plasticity, Forging.

Tylkin, M. A.
ARC SURFACING OF COMPONENTS SUBJECT TO ABRASION WITH HARD ALLOYS, tr. by Miles de O. Tollemache. Aug 59 [8]p. [BISI] Trans. 1405; [Trans.] no. 5368; [DSIR] NLL M.4740.
Order from OTS or SLA $1.10 62-24237

Trans. of #Svarochnoe Proizv[odstvo] (USSR) 1959, no. 5, p. 35-36.

DESCRIPTORS: *Arc Welding, Surface area, Industrial equipment, Hardening, *Abrasion, Friction, Powder alloys, Hardness, Alloys.

For Abstract See Technical Translations 2: 669, 1959.

Vinogradov, G. A. and Fedorchenko, I. M.
EXPERIMENTAL METAL-CERAMIC ROLLING MILL. 17 May 63, 5p. (figs. omitted). JPRS: 19253.
Order from OTS $0.50 63-21846

Trans. of Poroshkovaya Metallurgiya (USSR) 1961 [v. 1] no. 2, p. 101-107.

DESCRIPTORS: *Rolling mills, *Powder metallurgy, Ceramic materials, Porous materials, Industrial production

The designs of an experimental metal-powder rolling mill is described. The mill is intended for laboratory investigations and for industrial use in production of metal-powder porous and non-porous rolled stock for various uses.

Wise, E. M.
PRECIOUS METALS IN INDUSTRY [Les Métaux Précieux dans l'Industrie]. 12 July 50, 20p. (figs. tables 56 refs. omitted).
Order from SLA $1.60 63-10043

Trans. of [Metaux (Corrosion-Industries)] (France) 1949 [v. 24] no. 284, p. 87-117.

DESCRIPTORS: Metals, *Gold, *Silver, *Platinum, Industrial production, *Corrosion inhibition, Physical properties, Safety devices, *Electrodeposition, Electrolysis.

Ferrous Metals

CONTINUOUS CASTING OF STEEL. 16 Apr 63 [24]p. 17 refs. JPRS: 18710.
Order from OTS $0.75 63-21578

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1963, no. 1, p. 34-48.

DESCRIPTORS: *Steel, Casting, Castings, Crystallization, Plug nozzles, Design, Nozzles, Fluid flow.

Contents:
The mechanism of crystallization of rimming steel during continuous casting, by V. B. Gankin
Development of improved designs of nozzles and stopped heads for continuous casting of steel, by E. I. Isaev and others

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 107. 16 Apr 63 [43]p. JPRS: 18725.
Order from OTS $1.25 63-21585

Trans. of Gornyi Zhurnal (USSR) 1963, no. 1, p. 3-15 and Nauchno-Tekhnicheskie Obshchestva SSSR, 1962 [v. 4] no. 12, p. 20-24.

DESCRIPTORS: *Metallurgy, Industrial research, *Ores, Iron, Industrial plants, Industrial production, Economics.

Contents:
Results of the first four years of the Seven-Year Plan and objectives before the ore mining industry, by P. E. Sisdzyuk
The Soviet iron ore industry from 1959-62, by L. M. Feigin
The public bureaus for economic analysis at the Kuznetsk metallurgical combine, by Yu. Solov'ev
Scientific-technical societies help advance ferrous metallurgy, by M. Borodavkin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 109. 19 Apr 63 [53]p. JPRS: 18795.
Order from OTS $1.50 63-21616

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 11, p. 20-22; Sotsialisticheskii Trud (USSR) 1962 [v. 7] no. 12, p. 73-77; Metallurg (USSR) 1963 [v. 8] no. 1, p. 1-3, 34-35; Metallurgicheskaya i Gornorudnaya Promyshlennost' (USSR) 1962, no. 6[18] p. 8-14; Razvedka i Okhrana Nedr (USSR) 1963 [v. 29] no. 1, p. 1-8.

DESCRIPTORS: *Industrial production, *Metallurgy, Economics, Labor, Costs, Conferences, *Open hearth furnaces, Operation, *Steel, Maintenance, *Mining engineering, Management engineering, Geophysical prospecting.

Contents:
Reduce the production cost of Kustanai iron ore, by N. Sandrigailo
Immediate problems of production norms in ferrous metallurgy, by V. Udovichenko
Development of ferrous metallurgy in the next few years, by M. A. Pertsev and S. M. Filippov
The Plenum of the Scientific and Technical Society of Ferrous Metallurgy (no. 2) by A. Novikov
Steel production in the Ukrainian SSR during 1959-61, by I. I. Bornatskii
Ways of increasing the productivity of open-hearth furnaces, by N. N. Dobrokhotov
Results and tasks of geologic prospecting in Siberia, by I. M. Kosov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 110. 22 Apr 63, 60p. JPRS: 18811.
Order from OTS $1.75 63-21624

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 52[73] p. 10 and 13; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 12, p. 3-19 and 27-29.

DESCRIPTORS: *Industrial production, *Metallurgy, *Iron compounds, Natural gas, Blast furnaces, Heating, Open hearth furnaces, Oxygen, Steel, Castings, Magnesium.

Contents:
On the threshold of the fifth year of the Seven-Year Plan in Soviet ferrous metallurgy
Ferrous metallurgy facing greater responsibilities in the year 1963, by I. Golikov
Natural gas in ferrous metallurgy
Application of raw and converted natural gas in blast furnace production, by N. K. Leonidov
Heating of open-hearth furnaces with natural gas, by L. M. Efimov
Application of oxygen in open-hearth steel production, by K. M. Trubetskov
Obtaining cast magnesium by the "double modification" method, by F. S. Emel'desh.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 111. 22 Apr 63, 31p. JPRS: 18818.
Order from OTS $1.00 63-21628

Trans. from Trud, Moscow (USSR) 1963, 9 Jan, p. 2; Leninskoe Znamya (USSR) 1962, 14 Oct, p. 2; Izvestiya (USSR) 1963, 8 Jan; Ekonomicheskaya Gazeta (USSR) 1963, no. 2[75] p. 9; no. 3[76] p. 11, 36-37.

DESCRIPTORS: *Industrial production, *Metallurgy, *Iron compounds, Oxygen, Steel industry, Powder metallurgy, Industrial equipment, Coke, Coal, Industrial plants.

Contents:
Introduce more broadly the oxygen converter method of steelmaking, by P. Rubinskii
The Elektrostal' metallurgical plant expands its output, by V. Markelov and S. Suliev
Current status of powder metallurgy
Expedite the modernization of the Dnepropetrovsk metallurgical equipment plant, by B. Zolotov
Improve the performance of the Magnitogorsk metallurgical combine, by F. Voronov and G. Andronov
Modernize the Amurstal ' metallurgical plant, by A. Frolov
How the coke-chemical shop of the Orsk-Khalilovo metallurgical combine improves its efficiency, by K. Fomichenko
Improve the quality of coking coal, by A. Sergeev and others
Strengthen the inspection of coking coals, by G. Mnukhin.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 112. 24 Apr 63, 33p. JPRS: 18874.
Order from OTS $1.00 63-21663

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 4[77] p. 12-13; Izvestiya (USSR) 1963, 22 Jan; Pravda, Moscow (USSR) 1963, 24 Jan; Stroitel'naya Gazeta (USSR) 1963, 3 Feb; Rabochaya Gazeta (USSR) 1963, 18 Jan.

DESCRIPTORS: *Metallurgy, Industrial production, Steel, Casting, Iron alloys, Castings, Pipes, Industrial plants, Construction, Concrete, Refractory materials, Furnaces, Oxygen.

Contents:
The economic significance of continuous steel casting, by V. Andreev
A new semicontinuous pipe casting method, by I. Kachalin and others
Construction at the West Siberian metallurgical plant behind schedule, by I. Kir'yanov
Production of heat-resistant concrete in the Soviet Union
The pipe manufacturing industry accelerates pace, by B. Pereberin
Oxygen converter production is expanding, by N. Aleksandrenko
Oxygen converter plant construction is behind schedule, by M. Gavrilenko.

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 113. 24 Apr 63, 18p. JPRS: 18886.
Order from OTS $0.50 63-21667

Trans. from Stroitel'naya Gazeta (USSR) 1963, 30 Jan and Gornyi Zhurnal (USSR) 1963, no. 2, p. 55-61.

DESCRIPTORS: *Metallurgy, Industrial production, Industrial plants, Construction, Iron, Ores.

Contents:
Expedite the construction of the West Siberian metallurgical plant
Comprehensive utilization of the Ural iron ores, by A. P. Kvaskov and others
Through concentration of ores at the Nizhne-Tagil metallurgical combine, by G. V. Zhukovskii

USSR INDUSTRIAL DEVELOPMENT: SOVIET FERROUS METALLURGY NO. 114. 26 Apr 63, 52p. JPRS: 18931.
Order from OTS $1.50 63-21693

Trans. from Voprosy Ekonomiki (USSR) 1963, no. 1; Stroitel'naya Gazeta (USSR) 1962, 8 Feb; Rabochaya Gazeta (USSR) 1963, 13 Feb; 15 Feb; 19 Feb, p. 2; #Metallurg (USSR) 1963 [v. 8] no. 2, p. 1-2.

DESCRIPTORS: *Metallurgy, Industrial production, Welding, Industrial plants, Smelting.

Contents:
The development of small-scale metallurgy in the USSR, by R. Bogdanov
Delays in construction of electric pipe welding mills, by G. Mikhailik
Achievements at the Zaporozhstal' plant
Development of new smelter process at Zaporozhstal', by G. Gurskii
Evaluation of activity at Zaporozhstal' plant, by I. Malyi
Industrial achievements at Azovstal', by G. Gorban' and others
Development of plant imeni Kirov hampered by lack of a cast-iron foundry and appropriate repair base, by V. Pashinskii and others
Evaluation of industrial experience at Krivoi Rog, by R. Kamenev and others
Technical progress at ferrous metallurgy plants of the RSFSR in 1963, by N. Sheftel'

Belyakov, A. I.
EFFECT OF STRAIN HARDENING OF EDGES OF COLD-ROLLED TRANSFORMER STEEL SPECIMENS ON ELECTROMAGNETIC CHARACTERISTICS. Jan 58 [7]p. GKN Trans-607; BISI Trans. no. 795; [DSIR] NLL M. 4159.
Order from OTS or SLA $1.10 62-24166

Trans. of Stal' (USSR) 1957, v. 17, no. 2, p. 185-187.

DESCRIPTORS: *Steel, *Transformers, Cold-working, Hardness, Electromagnetic properties, Heat treatment, Tests.

A determination of the magnetic properties of transformer steel according to the Russian state standard 802-54, i.e. without relief of strain hardening at edges in specimens tested on the Epstein apparatus somewhat increased watt losses and lowered magnetic induction. Annealing at 750-850°C to relieve strain hardening lowered specific losses 15-20% and somewhat increased the magnetic induction (B_{25} increased 100-400 gauss). (Author)

Beshlyk, A. S.
EXPERIENCE IN THE CASTING OF ROLLING MILL ROLLS IN CAST IRON MODIFIED WITH MAGNESIUM. Dec 58 [11]p. Davy Trans. 187; BISI Trans. 1101; [DSIR] NLL M.4067.
Order from OTS or SLA $1.60 62-24085

Trans. of mono. Poluchenie Otlivok iz Vysokoprochnogo Chuguna (Production of High-Strength Iron Castings) ed. by L. I. Fantalov, Moscow, 1955, p. 173-181. Another trans. is available from MT, Jan 60.

DESCRIPTORS: *Casting, Castings, *Rolling mills, *Iron alloys, *Magnesium alloys, Chromium alloys, Nickel alloys, Silicon alloys, Furnaces, Life expectancy, Structural properties.

Blom, L., Stijntjes, J. A. and others.
RAPID DETERMINATION OF TOTAL CARBON IN STEELS AND CAST IRONS. Apr 63.
Order from BISI £2 15s BISI-3227

Trans. of Chimie Analytique (France) 1962 [v. 44] July, p. 302-308.

DESCRIPTORS: *Carbon, *Steel, *Iron, Carbon dioxide, Titration, Pyridines, Sodium compounds, Methyl radicals, Chemical analysis.

Borchers, H., Hoff, H. -H. and others.
EFFECT OF REDUCTION DURING ROLLING AND SKIN PASSING ON THE ANISOTROPY OF MECHANICAL PROPERTIES OF STEEL STRIP FOR DEEP DRAWING PURPOSES. Apr 63.
Order from BISI £6 5s BISI-3161

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1963, v. 34 [no. 1] p. 17-26.

DESCRIPTORS: Reduction, Rolling mills, Mechanical properties, *Steel, Processing, Carbon, Anisotropy, Drawing (Machine processing).

Brandt, H. -G., Reichmann, B., and Sperner, F.
THE EFFECT OF REMELTING STEEL IN THE VACUUM ARC FURNACE ON THE PROPERTIES OF HIGH-STRENGTH STRUCTURAL STEELS USED IN THE AIRCRAFT INDUSTRY. Apr 63.
Order from BISI £5 10s BISI-3137

Trans. of Stahl und Eisen (West Germany) [1963, v. 83, no. 1] p. 30-36.

DESCRIPTORS: *Steel, Carbon alloys, Chromium alloys, Molybdenum alloys, Nickel alloys, Vanadium alloys, Tensile properties, Fatigue (Mechanics), Heat treatment, Aircraft industry.

Cernoch, S., Repisky, I., and Micek, M.
RESEARCH INTO THE FLOW PATTERN OF COMBUSTION GASES IN, AND THE HEATING OF, SOAKING PITS BY MEANS OF MODELS. Mar 60 [10]p. 2 refs.
Order from SLA $1.10 62-14529

Trans. of Hutnik (Czechoslovakia) 1960, v. 10, no. 1, p. 21-24.
Other trans. are available from MT as MT Trans-85, Jan 60' and BISI £5 10s as BISI-1640 [1960].

DESCRIPTORS: *Gas flow, Combustion, *Furnaces, Design, *Steel, Industrial research, Model tests.

For abstract see Technical Translations 3: 806, 1960.

Dubinin, G. N.
DIFFUSION OF NIOBIUM INTO STEEL FROM THE GAS PHASE. Feb 58 [14]p. 10 refs. GKN Trans-614; [BISI] Trans. no. 802; [DSIR] NLL M. 4122.
Order from OTS or SLA $1.60 62-24129

Trans. of Zhur[nal] Tekhn[icheskoi] Fiz[iki] (USSR) 1952, v. 22, no. 11, p. 1730-1740.

DESCRIPTORS: *Steel, *Niobium, *Diffusion, Gases, Niobium compounds, Chlorides, Iron alloys, Carbon alloys, Niobium alloys, Surface properties, Diffraction analysis, Microstructure, Microanalysis.

Steel and iron were surface impregnated with niobium from the gas phase for the first time. The nature, physical and chemical properties of niobium-impregnated layers on iron and steel were investigated by various methods. It was found that the iron-niobium system is one having a closed γ region, as suggested by Voronov. (Author)

Figel'man, M. A. and Shreider, A. V.
A METHOD OF STUDYING HYDROGEN EMBRITTLEMENT OF STEEL. Mar 58 [5]p. 8 refs. GKN Trans-642; [BISI] Trans. no. 872; [DSIR] NLL M.4108.
Order from OTS or SLA $1.10 62-24115

Trans. of Zavodskaya Labor[atoriya] (USSR) 1956, v. 22, no. 5, p. 586-588.

DESCRIPTORS: *Steel, *Hydrogen embrittlement, Sheer stresses, Tests, Test equipment.

Gagin, S. D.
THE EFFICIENCY OF ELECTRIC STEEL PRODUCTION BY THE DUPLEX METHOD OF OXYGEN CONVERTER AND ELECTRIC FURNACE. June 59 [18]p. 8 refs. GKN Trans. 829; BISI Trans. 1282; [DSIR] NLL M. 4577.
Order from OTS or SLA $1.60 62-24220

Trans. of Kislorod (USSR) 1957 [v. 10] no. 6, p. 1-11.

DESCRIPTORS: *Steel, *Electric furnaces, *Oxygen, *Blast furnaces, Production

Conversion of sections of electric steelmaking plant to the duplex process permits an improvement in the supply of scrap to furnaces working on the solid charge system. The productivity of electric furnaces working on half product can be doubled and the consumption of power and electrodes cut three times. The method of overhead oxygen blowing in a basic converter provides fully adequate dephosphorisation (to 0.030%). The combination of converters and electric furnaces in the duplex process establishes a better and more flexible synchronisation of the work than the combination of open hearth and electric furnace due to the quicker throughput of the converter. Essential conditions for the economic expediency of a conversion to the duplex process in the conditions under consideration, are an assured reduction of the melting time of 32-36% compared with that of a solid charge system. (Author)

Hauffe, K. and Pfeiffer, H.
THE KINETICS OF WUSTITE FORMATION IN THE OXIDATION OF IRON. [1962] [33]p. 27 refs.
Order from SLA $3.60 62-20071

Trans. of Z[eitschrift für] Metallkunde (West Germany) 1953, v. 44, p. 27-36.

DESCRIPTORS: Dynamics, *Wustite, *Iron compounds, *Oxides, *Oxidation, *Reaction kinetics, Chemisorption

The special case, where in the formation of compact surface oxide layers the reaction-vs.-time curve has a linear characteristic observed and interpreted in the oxidation of iron under certain conditions. The chemisorption of oxygen formed by the decomposition of CO_2 is considered as the oxidation step which determines the oxidation rate. The application of Wagner's oxidation theory to the oxidation of iron in strongly oxidizing atmospheres and the deviation according to which at higher temperatures the growth of FeO in CO_2/CO mixtures is independent of the thickness of the layer, are explained kinetically. The dependence of the rate constant of the formation of wüstite and of the defect order concentrations upon the composition of the gas mixture and the temperature is determined. Furthermore, the mobilities of the sites of imperfection are calculated by an indirect method. (Author)

Ioffe, M. M., Petrenko, A. G., and Chub, G. G.
THE INFLUENCE OF TECHNOLOGICAL FACTORS ON THE ELECTROMAGNETIC PROPERTIES OF COLD-ROLLED TRANSFORMER STEEL. May 58 [11]p. 3 refs. GKN Trans-897; [BISI] Trans. no. 897; [DSIR] NLL M. 4103.
Order from OTS or SLA $1.60 62-24110

Trans. of Stal' (USSR) 1957, v. 17, no. 10, p. 936-940.

DESCRIPTORS: *Steel, *Transformers, Production, Cold-working, Sheets, Electromagnetic properties, Heat treatment, Carbon, Sulfur, Vacuum apparatus, Hot-working.

The "Zaporozhstal" Works, together with the Central Research Institute of Ferrous Metallurgy, has been carrying out work on the production technique for sheets of cold-rolled transformer steel, 0.35 and 0.5 mm thick and 750 x 1500 mm dimensions. The carbon content of the finished sheet fluctuates between 0.010 and 0.015%; reduction of the carbon content within these limits leads only to an insignificant reduction of specific loss. Carbon is only burnt up during the first black annealing. Vacuum treatment of the molten steel effects a reduction in the carbon and sulphur content of the metal. Further investigation will have to be made

into the influence of vacuum treatment on the reduction of specific losses. Elevation of the temperature of vacuum annealing above 1100°C. does not lead to any further reduction of specific losses. (Author)

Kazarnovskii, D. S., Ravitskaya, T. M. and others.
PROPERTIES OF OH STEEL PROCESSED WITH OXYGEN (Svoistva Martenovskoi Stali, Vyplavlennoi s Primeneniem Kisloroda) tr. by R. C. Murray. May 57 [17]p. (foreign text included) 1 ref. BISI Trans. no. 539; Trans-T-4420; DSIR NLL M. 4154.
Order from OTS or SLA $1.60 62-24161

Trans. of Stal' (USSR) 1957, v. 17, no. 2, p. 152-157.

DESCRIPTORS: *Steel, Open hearth furnaces, Processing, *Oxygen, Mechanical properties, Statistical analysis, Tests, Carbon alloys.

Injection of oxygen into the flame of an OH furnace before deoxidation, and also into the bath during the refining period, did not impair the investigated physical and mechanical properties of rail steel containing 0.6 - 0.8% carbon. Intensification of the processing of a carbon steel by injection of oxygen into the bath ending 55 - 8 minutes before deoxidation did not lower the static strength, ductility and fatigue properties of the steel. However, when injection into the bath finished less than 60 minutes before deoxidation, there was some increase in the total content of oxygen, a lowering of the impact value, and an acceleration of ageing as the time between end of injection and deoxidation decreased. (Author)

Krainer, H.
FIFTY YEARS OF STAINLESS STEEL. [1963].
Order from BISI £6 15s BISI-3081

Trans. of Technische Mitteilungen Krupp (West Germany) 1962, v. 20, Oct, p. 165-179 (also pub. in Stahl und Eisen (West Germany) 1962, v. 82 [no. 22] p. 1527-1540).

DESCRIPTORS: Industrial research, *Stainless steel, Metallurgy.

Krautmacher, H. and Greis, F.
DRAWING EXPERIMENTS ON HIGH CARBON STEEL WIRES WITH A FINAL DIAMETER OF 5.0 mm. Apr 63.
Order from BISI £5 BISI-3219

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 25] p. 1801-1809.

DESCRIPTORS: *Steel, Carbon alloys, *Wire, *Drawing (Machine processing).

Lauprecht, W. and Rädeker, W.
CARBURIZATION AND DECARBURIZATION OF THE PERIPHERAL ZONE OF NON-ALLOY AND ALLOY STEELS IN THE GAS PHASE BETWEEN 900-1200°C. Apr 63.
Order from BISI £6 10s BISI-3070

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 6] p. 371-383.

DESCRIPTORS: *Steel, *Alloys, Gases, *Carbon, Chromium, Nickel, Titanium, Niobium, Carbon compounds, Monoxides, Hydrogen, Hydrogen compounds.

Miller, Yu. G.
COEFFICIENTS OF LINEAR EXPANSION OF DILUTE α-SOLID SOLUTIONS OF Fe WITH Cr, Mo AND W (Koeffitsienty Lineinogo Rasshireniya Razbavlennykh α-Tverdykh Rastvorov Fe s Cr, Mo i W). [1962] [7]p. (foreign text included) 4 refs.
Order from OTS or SLA $1.10 62-18925

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 3, p. 488-489.

DESCRIPTORS: *Iron alloys, *Chromium alloys, *Molybdenum alloys, *Tungsten alloys, Thermal expansion.

Petrov, I. I.
THE DEVELOPMENT AND ADOPTION OF A TECHNIQUE FOR CASTING HIGH-STRENGTH IRON (EXPERIENCE AT THE SYZRAN HYDROTURBINE WORKS). Dec 58 [11]p. Davy Trans. 189; BISI Trans. 1103; [DSIR] NLL M. 4319.
Order from OTS or SLA $1.60 62-24197

Trans. of mono. Poluchenie Otlivok iz Vysokoprochnogo Chuguna (Production of High-Strength Iron Castings) ed. by L. I. Fantalov, Moscow, 1955, p. 192-199.
Another trans. is available from MT, Jan 60.

DESCRIPTORS: *Casting, *Iron alloys, Production, Mechanical properties, Magnesium alloys, Oxygen.

The necessary heating of the cast iron for treatment with magnesium can in practice be achieved by operating reverberatory furnaces, using regenerators, or injecting the stream of iron with oxygen directly into the tap hole of the reverberatory furnace. Magnesium may be introduced in a rational manner in the forehearth of a reverberatory furnace, but in the absence of such a furnace, in a ladle with a closed top, placed in a pit. The best results in respect of mechanical and plastic properties are obtained from parts cast in chill moulds, as a result of the more favourable structure of the spheroidal graphite. (Author)

Rassman, G. and Wich, H.
IMPROVEMENT OF THE COERCIVE FORCE OF TECHNICAL SOFT IRON FOR RELAY CONSTRUCTION. I. INFLUENCE OF PRETREATMENT. Apr 63.
Order from BISI £3 15s BISI-3071

Trans. of Neue Hütte (East Germany) 1962, v. 7, no. 10, p. 623-628.

DESCRIPTORS: *Iron alloys, Relays, Mechanical properties, Annealing, Processing, Recrystallization, Grain structure (Metallurgy).

Red'ko, A. N.
UTILISATION OF MANGANESE IN FERRO-MANGANESE WHEN OPERATING THE BLAST-FURNACE ON OXYGEN ENRICHED BLAST, tr. by H. R. Lahr. Feb 59 [6]p. GKN Trans-397; BISI Trans. no. 1193; [DSIR] NLL M.4325.
Order from OTS or SLA $1.10 62-24203

Trans. of #Metallurg (USSR) 1958 [v. 3] no. 9, p. 7-10.

DESCRIPTORS: *Iron alloys, *Manganese alloys, Ores, *Blast furnaces, *Oxygen, Air blast, Smelting, Coke, Silicon, Slags, Operation.

Rytel, K.
POSSIBILITIES OF SAVING STEEL IN THE USE OF SECTIONS. [1962] [14]p. 2 refs.
Order from SLA $1.60 62-14337

Trans. of Neue Hütte (East Germany) 1959, v. 4, no. 6, p. 343-351.
Another trans. is available from BISI £4 5s as BISI-1446 [1959].

DESCRIPTORS: *Steel, *Structural parts, Economics, Design, Mathematical analysis, Structures, Rolling mills, Welding, Production.

This paper offers a possibility of determining the saving of steel in the manufacture of sections. It gives information about difficulties and problems in the widely used sections. A quantitative analysis of the possibilities of steel saving and the change in manufacturing costs to be expected therefrom is given. Welding of H sections presents the greatest possibilities but involves the highest costs. There is no reduction of rolling mill capacity. With other measures, reduction of web thickness or total wall thickness, the cost increase is smaller, but rolling mill capacity is reduced. (Author)

Schenck, H., Frohberg, M. G., and Reinders, F.
CONTRIBUTION OF THE KNOWLEDGE OF NITROGEN SOLUBILITY IN IRON ALLOYS IN THE TEMPERATURE RANGE 700 - 1200°C. Apr 63.
Order from BISI £5 BISI-3217

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 2] p. 93-99.

DESCRIPTORS: *Nitrogen, Solubility, *Iron alloys, Iron, Temperature, Pressure, Carbon, Silicon, Phosphorus, Cobalt, Nickel, Chromium, Manganese, Molybdenum.

Skuin, K.
ON THE DETERMINATION OF THE AUSTENITE GRAIN SIZE IN HEAT-TREATABLE STEELS. Mar/Apr 63, 1400 words.
Order from HB $3.90 HB-5831

Trans. of Neue Hütte (East Germany) 1962, v. 7, no. 11, p. 698-699.

DESCRIPTORS: *Steel, *Austenite, *Grain structures (Metallurgy), Heat treatment, *Metallography.

Slutskaya, T. M.
13KH3GNMA WELDING WIRE FOR THE AUTOMATIC WELDING OF 30KLGSA STEEL. Oct 57 [9]p. 4 refs. GKN Trans-579; BISI Trans. no. 730; [DSIR] NLL M. 4175.
Order from OTS or SLA $1.10 62-13189

Trans. of Avtomaticheskaya Svarka (USSR) 1956 [v. 9] no. 2, p. 12-17.

DESCRIPTORS: *Welding, Wire, Electrodes, Automatic, *Steel, Welds, Welding fluxes, Creep, Mechanical properties, Heat treatment, Carbon alloys, Silicon alloys, Manganese alloys, Chromium alloys, Nickel alloys, Molybdenum alloys, Sulfur, Phosphorus alloys, Titanium alloys.

The use of 13KH3GNMA electrode wire with AN-348A standard flux ensures a butt-weld of uniform strength in automatic welding of 30KHGSA steel, thermally treated for a tensile stress of 110 kg/sq. mm. and above. The developed technique of automatic welding of 30KHGSA steel ensures high resistance of the weld metal towards formation of cracks and the absence in it of faults (porosity, inclusions of slag, low penetration, etc). The preliminary results suggest that it is possible, in principle, to obtain welded joints possessing desired properties without the necessity for alloying with molybdenum. (Author)

Slutskaya, T. M. and Gordonnyi, V. G.
RESEARCH INTO NEW TYPES OF LOW-ALLOY STEEL FOR WELDED STRUCTURES [Issledovanie Novykh Variantov Nizkolegirovannykh Stalei dlya Svarnykh Konstruktsii] tr. by Miles de O. Tollemache. Feb 59 [16]p. 8 refs. [BISI] Trans. 1166; [Trans.] no. 5087; [DSIR] NLL M. 4304.
Order from OTS or SLA $1.60 62-24189

Trans. of Avtom[aticheskaya] Svarka (USSR) 1958, v. 11, no. 9, p. 3-12.
Another trans. is available from MT, Jan 60.

DESCRIPTORS: *Steel, Industrial research, *Welding, Structures.

The method of developing the new types of steel is described, and a series of new types of low-alloy, high strength, structural steels which also have good weldability are proposed. (Author)

Tsirlin, B. M.
MODERNIZATION OF UNITS OF SLABBING MILL EQUIPMENT. Aug 57 [12]p. Davy Trans. 93; [BISI] Trans. 546; [DSIR] NLL M. 4152.
Order from OTS or SLA $1.60 62-24159

Trans. of Stal' (USSR) 1957, v. 17, no. 3, p. 232-238.

DESCRIPTORS: *Rolling mills, Construction, Maintenance, Design, Industrial equipment.

Following a description of the Zaporozhstal slabbing mill prior to reconstruction, details are given of changes made to increase efficiency. Major alterations were made to the breast rollers and the main table drives, while the horizontal roll neck bearings were replaced by synthetic resin. Disc type roller tables on the shear runout are described and also the mechanisation of the scrap and scale collection equipment. (Author)

Wusatowski, Z., Spyra, E., and Rytel, K.
A STUDY OF ROLL WEAR. Apr 63.
Order from BISI £7 5s BISI-3009

Trans. of Prace Instytutow Hutniczych (Poland) 1961, v. 13, no. 3, p. 153-172.

DESCRIPTORS: Roll, *Degradation, *Rolling mills, *Hardness, Steel, Iron, Surface properties, Geometric forms, Fracture mechanics.

Zinov'ev, N. V.
MODERN HOT-BLAST CUPOLAS STEEL-MELTING PLANT. Feb 59 [10]p. 4 refs. GKN Trans-776; BISI Trans. no. 1132; [DSIR] NLL M.4308.
Order from OTS or SLA $1.10 62-24192

Trans. of Stal' (USSR) 1958 [v. 18] no. 9, p. 796-799.

DESCRIPTORS: *Steel, Melting, Iron alloys, *Cupola furnaces, Smelting, Operation, Heat, Air blast.

Light Metals

Dvornik, I. and Krsul, M.
DOMESTIC RAW MATERIALS FOR THE MANUFACTURE OF ANODE PASTE USED IN THE ALUMINUM INDUSTRY. [1963] 15p.
Order from ATS $20.00 ATS-99Q67CR

Trans. of Tehnicki Pregled (Yugoslavia) 1952 [v. 4, spec. no.] Oct, p. 46-51.

DESCRIPTORS: *Aluminum, Industrial production, *Anodes, Materials.

Hahn, G. and Moldenhauer, W.
INFLUENCE OF TEMPERATURE AND CONCENTRATION OF THE ELECTROLYTE ON THE FORMATION OF ANODIC FILMS. [1962] 7p. 11 refs.
Order from SLA $1.10 63-10857

Trans. of Aluminium (West Germany) 1960 [v. 36] no. 5, p. 265-267.

DESCRIPTORS: *Aluminum, *Anodes, Coatings, Films, Oxides, Production, *Electrolytes, Temperature

Keller, H.
CLEANING AND GRAIN REFINING FLUXES IN THE ALUMINIUM FOUNDRY (Reinigungs- und Kornfeinungsmittel in der Aluminium-Giesserei Flux de Nettoyage et d'Affinage en Fonderie d'Aluminium). Aug 62 [23]p. (foreign text included) 15 refs.
Order from SLA $2.60 62-18822

Trans. of Aluminium Suisse (Switzerland) 1962, v. 12, no. 2, p. 75-83.

DESCRIPTORS: *Aluminum, Foundries, *Fluxes (Fusion), Grains (Metallurgy), Cleaning, Refineries, *Aluminum alloys, Castings.

Nonferrous (except light) Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 59. 24 Apr 63, 40p. JPRS: 18875.
Order from OTS $1.25 63-21664

Trans. of Razvedka i Okhrana Nedr (USSR) 1963 [v. 29] no. 1, p. 9-13; Nauchno-Tekhnicheskie Obshchestva SSSR, 1963 [v. 5] no. 1, p. 46-48; and from Izvestiya (USSR) 1963, 3 Feb; Pravda, Moscow (USSR) 1963, 22 Jan; Leninskaya Smena (USSR) 1963, 14 Feb; Ekonomicheskaya Gazeta (USSR) 1963, no. 5(78) p. 3, 40; no. 6(79) p. (?).

DESCRIPTORS: *Industrial production, *Metallurgy, Housing, *Asbestos, Aluminum, Siberia, *Powder metallurgy, Oxygen, *Copper, Smelting, *Gold, Electrical equipment, Industrial procurement, Economics.
Contents:
For a unified technical policy in metallurgy, by V. Boiko
Recent growth of the housing supply of the Moscow Nonferrous Metals Processing Plant, by L. Bogdanov
Expedite the construction of the Dzhetygar Asbestos Combine, by V. Vlasov
Prospects for expanding the raw materials base of the Siberian aluminum industry, by M. S. Soshnikova
A dispute on the design of powder-metallurgy equipment, by B. L'vov
Expand the use of oxygen in nonferrous metallurgy
Introducing oxygen in copper smelting at Irtysh, by N. Faizulin and . A. Prokhorov
Using oxygen in copper production at the Karabash Mining and Metallurgical Combine, by N. Sokhanskii
Using oxygen at the Kirovograd Copper Smelting Combine, by A. Drobchenko
Using oxygen at the Ordzhonikidze Elektrotsink Plant, by I. Reznichenko
Mechanize the beneficiation of gold, by V. Barabanov
Replace pressed busbars by cast busbars at aluminum plants, by G. Arolovich.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 60. 7 May 63, 34p. JPRS: 19083.
Order from OTS $1.00 63-21770

Trans. of ##Razvedka i Okhrana Nedr (USSR) 1962, no. 12, p. 28-30; Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 11, p. 19-20, 26-30, 68; and from Trud, Moscow (USSR) 1963, 19 Jan; Turkmenskaya Iskra (USSR) 1963, 24 Jan; Stroitel'naya Gazeta (USSR) 1963, 30 Jan; 1 Feb.
##Another trans. is available from OTS $1.75 in 63-21511, JPRS-18562, 4 Apr 63 [63]p.

DESCRIPTORS: *Industrial production, *Metallurgy, Industrial plants, Safety, Lead, Ores (Metal sources), Mining engineering, Economics, Mica, Panels (Structural), Aluminum, Management engineering, Ceramic materials, Thermal insulation, Glass, Labor, Education.

Contents:
Working conditions improve at the Chimkent lead plant, by K. Voinov
Problems of the Kugitang lead mine, by G. Dolgikh and others
##For better utilization of mica deposits, by M. M. Bocharnykov and V. M. Sedykh
Mineral resources of the Kola Peninsula, by V. Yaroslavskii
Construction difficulties at the Irkutsk aluminum plant, by P. Krasil'nikov
Production of building materials at the Khot'kovo experimental plant, by S. Mironov
Scientific achievements should be promptly adopted by industry, by K. Satpaev
For the utilization of substandard assay ores, by Yu. Voronenkov
Vital problems of the nonferrous metallurgy, by V. Bereza
Public design offices in Kazakhstan.

Bochvar, A. A., Sergeev, G. Ya. and others.
EFFECT OF CYCLIC HEAT TREATMENT ON THE DIMENSIONAL STABILITY OF METALS AND ALLOYS WHEN A LOAD IS CONTINUOUSLY APPLIED.
7 Dec 62 [14]p. 7 refs. FTD-TT-62-1271.
Order from OTS $0.50 63-11590

Unedited rough draft trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1961, v. 7, p. 3-10.

DESCRIPTORS: *Uranium, *Aluminum, *Zinc, *Brass, *Heat treatment, Periodic variations, Loading (Mechanics), Deformation, *Creep, Stability, Phase transitions, Metals, Alloys.

A study is made of the influence of continuous loading on the residual changes in shape of specimens of uranium, aluminum, zinc, and α and β brass undergoing cyclic heat treatment.

Gubkin, S. I. and Tsvaigel', Yu. A.
DEFORMABILITY OF BRONZES SUBJECTED TO PRESSURE PROCESSES OF WORKING. Sep 58 [14]p. 1 ref. GKN Trans-142; BISI Trans. no. 1039; [DSIR] NLL M. 4078.
Order from OTS or SLA $1.60 62-24093

Trans. of Akad[emiya] Nauk SSSR. Otd[elenie] Tekh-[nicheskikh] Nauk. Izvestiya, 1954, no. 1, p. 128-137.

DESCRIPTORS: *Bronze, Mechanical properties, Temperature, Standards, Hot working, Pressure, Material forming, Tests, Aluminum alloys, Iron alloys, Beryllium alloys, Tin alloys, Phosphorus alloys, Deformation, Plasticity.

Optimum temperature ranges have been established for the working under pressure of three standard bronzes (Al-Fe, beryllium and Sn-P) and the character of the rupture has been determined on the basis of the conduct of the ordinary mechanical tests. The data received on the stages of deformation leading to rupture may be used to determine maximum unit compression for relevant processes of working under pressure. This research has succeeded in closing the gap which has until now existed in the field of knowledge on optimum conditions for hot working of the alloys in question. The actual material received on plasticity and resistance to deformation may be used in developing new, and improving existing, production processes for the deformation of the three alloys investigated. (Author)

Tsutsumi, S. and Nagami, H.
MEASUREMENTS OF THE X-RAY CHARACTERISTIC OF SELENIUM PLATES. [1963] 4p.
Order from ATS $6.50 ATS-67Q67J

Trans. of Denshi Shashin (Japan) 1962, v. 4, no. 1, p. 7-9.

DESCRIPTORS: *Selenium, Metal plates, X-rays, Measurement.

Structural Metallurgy and Corrosion

Ferrero, M. and Ravizza, P.
ASSESSMENT OF THE DEFECT SIZE IN IRON AND STEEL PRODUCTS BY ULTRASONIC TESTING.
Apr 63.
Order from BISI £ 2 5s BISI-3110

Trans. of Revue de Métallurgie (France) 1962, v. 59 [no. 5] p. 445-450.

DESCRIPTORS: *Steel, *Iron, Ultrasonics, Nondestructive testing, Heat treatment, Surface properties Errors.

Krasnoyarskii, V. V. and Reznik, F. M.
CORROSION AND PROTECTION OF MATERIALS: BIBLIOGRAPHIC INDEX OF USSR WORKS 1917-59.
26 Apr 63, 128p. JPRS: 18939.
Order from OTS $2.75 63-21697

Trans. of mono. Korrosiya i Zashchita Materialov: Bibliografiya Otechestvennoi Literatury za Period s 1917 po 1959 Gody, Moscow, 1961, p. 5-16, 60-61, 71-75, 82-87, 147-153, 164-165, 210-213, 232-234, 240-242, 252-259, 263-266, 268-275.

DESCRIPTORS: *Bibliographies, Indexes, *Corrosion, *Protective treatments, Metals, Construction materials industry, *Corrosion inhibition, Coatings, Surfaces, Films, *Electrochemistry, Soils, *Preservation, Lubricants, Asphalt, Plastics, Underground structures, Petroleum industry, Materials, *Antioxidants.

Contents:
List of abbreviated and complete titles of periodical and continuing publications
List of conventional abbreviations
Introduction
Role of protective films in the corrosion process of metals
Soil corrosion
Corrosion in aggressive media
Corrosion inhibitors (retarders)
Preservative coatings and lubricants
Non-metallic coatings - general questions
Asphalt coatings
Plastics in anti-corrosion technology
Protection of underground installations from corrosion and stray currents
Corrosion and protection in the oil-refining industry
Corrosion on non-metallic materials.

Kutzelnigg, A.
COMPARISON BETWEEN THE RESULT OF WEATHERING IN AN INDUSTRIAL ATMOSPHERE AND SHORT-TERM TRIALS IN ATMOSPHERES CONTAINING SULPHUR DIOXIDE. Apr 63.
Order from BISI £4 BISI-3160

Trans. of Werkstoffe und Korrosion (West Germany) 1958, v. 9, no. 7, p. 429-434.

DESCRIPTORS: *Corrosion, Atmosphere, Corrosive gases, Exposure, Sulfur compounds, Oxides, Nickel, Zinc, Paints.

Sarkisov, M. A.
ON THE CORROSION AND EPIBIOSIS OF UNDERWATER METAL STRUCTURES OF HYDROELECTRIC POWER STATIONS. 8 May 63, 5p. JPRS: 19112.
Order from OTS $0.50 63-21787

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1962 [v. 32] no. 9, p. 30-32.

DESCRIPTORS: *Hydroelectric power systems, Structures, *Metals, Underwater, *Corrosion, Marine biology, Fouling, Protective treatments

Schikorr, G.
THE ATMOSPHERE CORROSION OF METALS. [1962] 12p. (figs. refs. omitted).
Order from SLA $1.60 62-20337

Trans. of Archiv für Metallkunde (Germany) 1948, v. 2, no. 7, p. 223-230.

DESCRIPTORS: Metals, *Corrosive gases, *Atmosphere, Climate, Atmospheric precipitation, Atmospheric temperature, Humidity, *Sulfur, Protective coverings.

Topics: Review of the literature on the atmospheric corrosion of metals; nature and course of atmospheric corrosion; relationship of corrosion to changes in atmospheric conditions (amount of precipitation, temperature, relative humidity, content of sulfur in the atmosphere); dependency of corrosion and the speed of rusting on the site of testing (in Germany and England); dependency of corrosion on the type of metal (rate of corrosion and electromotive series, protective-film formation against rain and S-compounds of the atmosphere, absolute atmospheric resistance of the metals, relationship between the speed of entrance of S-compounds of the air and the speed of corrosion); quantitative relationship between the sulfur in the atmosphere and atmospheric corrosion (determination of the content of sulfur compounds of the air, the "sulfur value" and corrosion of metals, the "sulfur value" and corrosion of non-metallic materials, cause of atmospheric corrosion of iron). (Author)

Takeuchi, Koso.
CORROSION INHIBITION BY HEXAMETAPHOSPHATE IN THE PRESENCE OF BIVALENT METALLIC IONS. 26 Apr 61 [6]p.
Order from SLA $1.10 62-18775

Trans. from Boshoku Gijutsu (Japan) 1959, v. 8, no. 4.

DESCRIPTORS: *Steel, *Corrosion inhibition, Sodium compounds, *Phosphates, Ions, Metals, Calcium, Zinc, Nickel

When sodium hexametaphosphate and bivalent metallic ions in neutral solution were used against the corrosion of steel, the minimum corrosion was obtained at the ratio of sodium hexametaphosphate 100 to calcium^{++}50, zinc^{++} 25 and nickel^{++}60. With 50 ppm, 200 ppm or 300 ppm sodium hexametaphosphate, the same ratios to the metallic ions were maintained. The amount of corrosive reagent was best at 75 to 100 ppm with surface area 0.42 cm^2 coupon. The pH had to be 6 to 9 (neutral solution). The temperature influence was due to dissolved oxygen (for example, maximum corrosion was shown at 60°C with calcium and 47°C with zinc.) Finally, nickel was more influenced by time than calcium and nickel. (Author)

Vaivade, A. and Lepin', L.
THE EFFECT OF TEMPERATURE ON THE OXIDATION RATE OF ALUMINIUM IN WATER AND AQUEOUS SOLUTIONS OF NEUTRAL SALTS (Vliyane Temperatury na Skorost' Okisleniya Alyuminiya v Vode i Vodnykh Rastvorakh Neitral'nykh Solei). 27 Aug 62 [18]p. (foreign text included) 20 refs.
Order from OTS or SLA $1.60 62-18907

Trans. of Akad[emiya] Nauk Latv[iiskoi SSR, Riga]. Izv[estiya] 1960, no. 5(154) p. 89-96.

DESCRIPTORS: *Aluminium, Oxidation, Corrosion, *Corrosive liquids, Water, Salts, *Potassium compounds, Chlorides, Solutions, Temperature.

The oxidation rate of pickled (in 2.0N HCl solution) aluminium has been investigated in distilled water and in 0.001 - 4.0N aqueous solutions of KCl under static conditions involving total immersion and open to air. The duration of tests was 15 days and the temperatures ranged from 20° to 90°C. It has been established that at 28° to 30°C the corrosion rate in distilled water and in 0.001-0.1N KCl solutions increased sharply and reached a maximum value which greatly exceeded the value of corrosion rate at 20°C. On raising the temperature from 40° to 70°C, the corrosion rate remained almost unchanged, while above 80°C it dropped sharply once again. On raising the temperature the corrosion rate in the 1.0N solution of KCl increased in a more regular manner and reached an ill-defined maximum at 40°-50°C. On raising the temperature of 2.0-4.0N solutions of KCl, a continuous increase in the corrosion rate was observed, which was especially sharp in the range from 20° to 40°C and above 70°C; it was not very significant in the range from 40° to 70°C. (Author)

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

RADIOISOTOPES IN YUGOSLAVIA. 23 Apr 63, 4p. JPRS: 18844.
Order from OTS $0.50 63-21643

Trans. from Tehnicke Novine (Yugoslavia) 1963, 15 Feb, p. 1 and 3.

DESCRIPTORS: *Radioactive isotopes, Production, *Yugoslavia, *Cobalt, Iridium, Gold, Iodine, Labeled substances.

Contents:
Soon: A cobalt bomb of Yugoslav manufacture
Radioisotopes from Vinca, by Cedomir Teofilovski.

Dorman, L. L., Kuz'min, A. I., and Skripin, G. V.
SOUNDING OF ELECTROMAGNETIC CONDITIONS BY HIGH ENERGY COSMIC RAYS IN INTERPLANETARY SPACE AND IN THE VICINITY OF EARTH, tr. by Andre L. Brichant. Mar 63 [7]p. 18 refs.
Available from AIAA in Its Journal, v. 1, no. 3, $5.00

Trans. of Geomagnetizm i Aeronomiya (USSR) 1961, v. 1, no. 3, p. 333-345.

DESCRIPTORS: *Electromagnetic properties, *Cosmic rays, Astrophysics, *Space environmental conditions, Energy, Diurnal variations, Solar disturbances, Magnetic storms, Spectroscopy, Terrestrial magnetism, Atmospheric sounding

Elpidinski, A. V. and Fetisov, I. N.
DÉPENDANCE DES CARACTÉRISTIQUES D'UN DÉTECTEUR DE PARTICULES ALPHA À SCINTILLATIONS EN FONCTION DE LA GRANULOSITÉ DU ZnS [Relationship Between the Characteristics of a Scintillation Alpha-Particle Detector and the Granularity of ZnS]. 28 Apr 62 [20]p. 3 refs. CEA Trans. no. R 1625.
Order from OTS or SLA $1.60 63-15470

Trans. in French of #Pribory i Tekh[nika] Eksper[imenta] (USSR) 1961 [v. 6] no. 4, p. 52-57.

DESCRIPTORS: *Sulfides, *Zinc compounds, *Grain structures (Metallurgy), *Scintillation counters, *Alpha particle detectors

La dépendance des propriétés fondamentales d'un détecteur à scintillation de rayonnement alpha en fonction de la dimension moyenne des grains de ZnS a été étudiée. Les caractéristiques optimales du détecteur réalisé suivant le schéma technologique décrit dans l'article ont été obtenues pour une dimension moyenne des grains de ZnS ~ 4μ. (Author)

Gorbunov, A. N. and Osipova, V. A.
THE PHOTODISINTEGRATION OF OXYGEN [PT.] I. [1962] 27p. 36 refs.
Order from OTS or SLA $2.60 AEC-tr-5395

Trans. of #[Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1962, v. 43, no. 1, p. 40-50].

DESCRIPTORS: *Oxygen, *Radioactive decay, Nuclear reactions, *Nuclear cross sections, *Photons, Gamma rays, Nucleons, Protons, Neutrons, Nuclear resonance, Cloud chambers, Magnetic fields.

The effective cross sections and the angular distributions were measured by means of a Wilson chamber in the magnetic field for the γ, p and γ, n reactions in oxygen. The total absorption cross section of the photons was determined in the high resonance range and up to 170 Mev. An asymmetry was noted in front of the angular distribution of the neutrons in the γ, n reaction. The results indicate the important role of the correlation of nucleons in the nucleus. (Author)

Kalberer, F. and Rutschmann, J.
A RAPID METHOD FOR THE DETERMINATION OF H^3, C^{14} and S^{35} IN ANY ORGANIC SAMPLE MATERIAL BY LIQUID SCINTILLATION COUNTING. [1962] 7p. (fig. tables refs. omitted).
Order from SLA $1.10 63-10879

Trans. of Helvetica Chimica Acta (Switzerland) 1961, v. 44, no. 7, p. 1956-1966.

DESCRIPTORS: *Radioactivity, Beta particles, Labeled substances, Hydrogen, Carbon, Sulfur, *Radioactive isotopes, Determination, Combustion, Absorption, Safety, Biochemistry, Liquids, *Scintillation counters, *Organic materials.

Ratner, B. S.
CHARGED-PARTICLE ACCELERATORS. 8 Feb 63 [119]p. 9 refs. FTD-TT-62-957. AD-298 239.
Order from OTS or SLA $9.60 63-19094

Unedited rough draft trans. of mono. Uskoriteli Zaryazhennykh Chastits, Moscow, 1960, 112p.

DESCRIPTORS: *Charged particles, *Particle accelerators, *Nuclear physics, Design.

The book develops in simple language the latest progress and history of the development of accelerator technology, explains the basic principles of accelerator operation and gives the necessary information concerning the structure of atoms, the atomic nucleus, and the main types of nuclear reactions. It is intended for a broad circle of readers without special training.

Rodier, J., Scheidhauer, J., and Malabre, M.
CONDITIONING OF RADIOACTIVE WASTE WITH BITUMEN, tr. by Martha Gerrard. [1962] [13]p.
Order from OTS or SLA $1.60 AEC-tr-4900

Unedited rough draft trans. of [Commissariat à l'Énergie Atomique] (France) no. CEA-1992, n.d.

DESCRIPTORS: *Radioactive waste, Processing, Coatings, *Bitumens, Diffusion, Hydrogen ion concentration, Water, Soils, Contamination.

The separation of radioactive sludge and waste by bitumen is studied. Results are given concerning various trials carried out on the lixiviation of the final product by water as a function of the pH, of the time, and of the composition. The conditions for carrying out this process of coating the waste are controlled from a radioactive point of view. (Author)

Zvara, I. and Tarasov, L. K.
INTERACTION OF GASEOUS $ZrCL_4$, $HfCl_4$, $NbCl_5$, AND $TaCl_5$ WITH KCl USING RADIOACTIVE INDICATORS. [1962] 12p. 14 refs.
Order from OTS or SLA $1.60 AEC-tr-5594

Trans. of J[oint] I[nstitute for] N[uclear] R[esearch] (USSR) P-957, n.d.

DESCRIPTORS: *Radiochemistry, Tracer studies, *Zirconium compounds, *Hafnium compounds, *Niobium compounds, *Potassium compounds, Chlorides, Radioactive isotopes, Gases, Chemical reactions, Vapor pressure, Thermodynamics.

To study the interaction of Zr, Hf, Nb and Ta chlorides with potassium chloride the radioactive indicators were used. The vapours of labeled chlorides in the stream of a carrier - gas were passed through a tube filled with KCl, along which a known temperature gradient was maintained. Then the radioactivity distribution along the tube was measured. The temperature dependence was obtained of the vapour pressure of the above chlorides over their double compounds with KCl in a comparatively low temperature range. (Author)

Nuclear Engineering

Anderson, E., Bollmann, W. and others.
THE EFFECT OF RADIATION OF THE DUCTILE-BRITTLE TRANSITION IN PRESSURE VESSEL STEELS. Quarterly rept. 3, 1 July-30 Sep 61, on Contract 041-60-12 RDS. [1962] 53p.
Order from OTS or SLA $5.60 EURAEC-180

Trans. of a rept. from Battelle Memorial Inst., Geneva (Switzerland) 1 Nov 61.

DESCRIPTORS: Pressure vessels, *Steel, Neutrons, *Radiation effects, Ductility, Brittleness, *Tensile properties, Tests, Electron microscopy, Reactor materials.

This report contains the results of tensile tests on Armco iron at room temperature. A device for electrolytically thinning tensile specimens for foils suitable for examination by transmission electron microscopy has been constructed and tested. A selection is presented of dislocation configurations, mostly tilt boundaries, observed in Armco iron. Examples of which are thought to be condensed vacancy loops in quenched and cold-worked material are also shown. A method for mounting samples to be irradiated, and for monitoring the maximum temperatures reached during irradiation is described, together with progress towards a satisfactory encapsulation procedure. (Author)

Anderson, E., Bollmann, W. and others.
THE EFFECT OF RADIATION ON THE DUCTILE-BRITTLE TRANSITION IN PRESSURE VESSEL STEELS. Quarterly rept. 4, 1 Oct-31 Dec 61, on Contract 041-60-12-RDS. [1962] 54p. 19 refs.
Order from OTS or SLA $5.60 EURAEC-239

Trans. of a rept. from Battelle Memorial Inst., Geneva (Switzerland) 26 Jan 62.

DESCRIPTORS: Pressure vessels, *Steel, Neutrons, *Radiation effects, Ductility, Brittleness, *Tensile properties, Electron microscopy, Internal friction, Fracture (Mechanics), Crystal lattice defects, Reactor materials.

This Report is chiefly devoted to the description of a new method of analysis of dislocation networks. This method has advantages over those already extant and has been developed to facilitate the understanding of the complex dislocation arrays observed by transmission electron microscopy (such as those shown in the previous report). The aims and scope of that part of the programme dealing with internal friction are given and the construction of a prototype torsion pendulum is described. Progress made in the other fields of investigation is briefly outlined. (Author)

Boesjes, H. H. and others.
[OPERATIONAL METHODS] FOR THE CONSTRUCTION OF PRESSURE VESSELS. Quarterly rept. 1, 1 Jan-31 Mar 62, on Contract 069-61-12 RDN. [1962] 10p.
Order from OTS or SLA $1.10 EURAEC-305

Trans. of a rept. from Neratoom N. V., The Hague (Netherlands) 24 Apr 62.

DESCRIPTORS: *Reactor system components, *Pressure vessels, Construction, *Steel, Chemical properties, Mechanical properties, *Arc welding, Carbon dioxide, Nozzles, Powder metals, *Welds.

Topics include: The chemical composition and mechanical properties of 1. 2MD07, A-302 B, and A-336-mod. steels; arc welds under powder covering; gas arc welds with the use of CO_2 (mechanical properties, welding procedure); special gas nozzle construction; and, encased CO_2 welds.

Boesjes [H. H.] and others.
OPERATIONAL METHODS FOR MAKING PRESSURE VESSELS. Quarterly rept. 2, 1 Apr-30 June 62, on Contract 069-61-12 RDN. [1962][23]p.
Order from OTS or SLA $2.60 EURAEC-393

Trans. of a rept. from Neratoom N. V., The Hague (Netherlands) 16 July 62.

DESCRIPTORS: *Reactor system components, *Pressure vessels, Construction, *Steel, Metal plates, Ultrasonics, *Arc welding, Powder metals, Carbon dioxide, *Slags, Impurities, Electroslag process, *Welds. Non-destructive testing.

Topics include: Ultrasonic testing of the steel plate material; arc welding under powder; arc welding under gas, by means of CO_2 (investigation on slag inclusions, tests with single and double welding heads); slag welding under CO_2 (tests with a single filler-rod, welding head for 200 mm plates); and, destructive and nondestructive testing of welds. (See also EURAEC-305)

Petrosyants, A. M.
SOVIET EXPLOITATION OF ATOMIC ENERGY: STENOGRAPHIC ACCOUNT OF A SPEECH, 19-23 NOV 62. 7 May 63, 7p. JPRS: 19074.
Order from OTS $0.50 63-21762

Trans. of unidentified mono. (rept.) on the Plenum, pub. by the State Publishing House for Political Literature, Moscow, 1963, p. 573-578.

DESCRIPTORS: *Nuclear energy, Nuclear engineering, Nuclear industrial applications.

Pinkhasik, M. S., Aristarkhov, N. N., and Karpov, A. V.
SOME PROBLEMS IN THE OPERATION OF THE BR-5 FAST NEUTRON REACTOR. [1962] [29]p. 1 ref.
Order from OTS or SLA $2.60 AEC-tr-5266

Trans. of mono. Nekotorye Voprosy Opyta Eksplutatsii Reaktori na Bystrykh Neitronakh BR-5, Moscow, 1961. A trans. in French is available from OTS $4.60 as 62-33732, CEA-tr-R1602, 14 Apr 62 [50]p.

DESCRIPTORS: Nuclear reactors, *Fast reactors, Fast neutrons, Starting, Operation.

This paper contains fundamental data on the startup and operation of the BR-5 reactor. Problems in preparation of the sodium coolant, and preparation and clean-up of the primary flow circuit prior to its filling with sodium are discussed. Results are given of investigations on effects of transferring of gas by the primary circulation pumps and on accumulation of gas bubbles in the reactor radiation zone when the coolent is circulated. Problems of reliable reactor cooling and of removal of the residual heat release from the fuel elements in the reactor radiation zone are discussed, and also results of experimental investigations of regimes of natural circulation in the flow circuits are given. Technological features and operation of the fuel handling mechanism are discussed. A table showing the technical specifications of the BR-5 reactor is also given.

Pomerski, Rudolf.
PROSPECTS OF NUCLEAR POWER DEVELOPMENT AND WORLD TRENDS IN ELECTRIC POWER GENERATION COST: EXCERPT, tr. by J. Woroncow. 13 Jan 61 [6]p. XDC-61-1-110.
Order from OTS or SLA $1.10 AEC-tr-4479

Partial trans. of Nukleonika (Poland) 1959, v. 4, no. 6, p. 39-53.

DESCRIPTORS: *Nuclear energy, *Nuclear power plants, Thermonuclear reactions, *Electric power production, Costs.

The author states that large-scale work is being conducted in the USSR on reactors for different propulsion systems (reactors for marine propulsion, aircraft propulsion, locomotive reactors). In addition, an outline is given on the prospects for thermonuclear power development in general and nuclear power development in Poland.

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

PROCESS FOR MANUFACTURE OF A SEAMLESS RUBBER STOCKING WITH RUBBER WOOF AND WITH HEEL KNITTED DIRECTLY ON CIRCULAR KNITTING MACHINES, tr. by J. R.-P. 11 Mar 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19070

Trans. of Belgian patent 554,435, cl. D04b, by Société Otto Fankhänel & Co., Germany, appl. filed 23 Jan 57, granted 15 Feb 57, printed 29 Jan 60 (priorities filed in Western Germany 17 July and 27 Oct 56).

DESCRIPTORS: *Clothing, *Rubber, *Manufacturing methods.

A procedure for the manufacture of a rubber stocking with rubber woof and with heel knitted directly on circular knitting machines in which after the knitting of the heel the rubber woof is again incorporated in the knit goods immediately after the stopping point in such a way that there is no stretched rubber filament but that the rubber woof passes through the whole stocking without interruption. For the manufacture of the heel, less than half the total number of needles of the machine is used. The heel is of creped yarn such as creped perlon, creped nylon or a similar yarn. (Author)

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 140 (PHYSICS AND MATHEMATICS SERIES). 17 Apr 63, 10p. JPRS: 18766.
Order from OTS $0.50 63-21604

Abstract trans. of [Polska Akademia Nauk]. Bulletin. Serie des Sciences Mathematiques, Astronomiques et Physiques, 1962, v. 10, no. 12, p. 617-635, 637-655, 657-667; 1963, v. 11, no. 1, p. 1-11, 13-38.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, Functions, Algebras, Integrals, Functional analysis, Geometry, Polarization, Alternating current, Ultrasonic radiation, Groups (Mathematics), Series, Inequalities, Nonlinear differential equations, Perturbation theory, Ferromagnetic materials, Magnetic fields, Field theory, Dyes, Fluorescence.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 149 (PHYSICS AND MATHEMATICS SERIES). 25 Apr 63, 9p. JPRS: 18907.
Order from OTS $0.50 63-21679

Abstract trans. of Kernenergie (East Germany) 1963, v. 6, no. 2, p. 49-86, 88.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, East Germany, Solids, Radiation damage, Nuclear cross sections, Particle beams, Focusing, Labeled substances, Synthesis (Chemistry), Ions, Separation, Reactor fuel processing, Phosphors, Dosimeters, Plutonium, Ion exchange, Detectors, Conferences, Differential equations, Electronics, Radiation tolerance, Safety, Mass spectroscopy, Thermodynamics, Radioactive isotopes, Handbooks, *Nuclear physics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 156 (PHYSICS AND MATHEMATICS SERIES). 30 Apr 63, 11p. JPRS: 19013.
Order from OTS $0.50 63-21732

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Hungary.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, Czechoslovakia, Hungary, Algebraic topology, Differential equations, Geometric forms, Integrals, Polynomials, Algebra, Mathematicians, Nuclear reactors, Probes (Electromagnetic), Dosimeters, Plastics, Neutron flux, Liquid-level gages, Functional analysis, Groups (Mathematics), Functions, *Nuclear physics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 166 (PHYSICS AND MATHEMATICS SERIES). 7 May 63, 11p. JPRS: 19097.
Order from OTS $0.50 63-21779

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, Czechoslovakia, Rods, Vibration, Wire, Temperature, Rubber, Radiation effects, Shear stresses, Color centers, Control systems, Geiger counters, Electron guns, Alkali metals, Halides, Crystallization, X-ray diffraction analysis, Friction, *Nuclear physics, Radioactive waste, Chromatographic analysis, Vulcanization, Pulse generators, Conferences, Research reactors.

ENGINEERING PHYSICS, 1962, VOL. 5, NO. 11: SELECTED ARTICLES. 21 Mar 63 [39]p. 22 refs. FTD-TT-63-158. AD-402 472
Order from OTS or SLA $3.60 63-19336

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 11, p. 3-24.

DESCRIPTORS: *Engineering, *Physics, Scientific research, *Heat transfer, Supersonic flow, Gas flow, Equations of motion, Evaporation, Pipes, High-temperature research, Friction, *Thermodynamics, Mass transfer.

Contents:
Experiments on heat transfer of a supersonic gas flow in a circular tube at high temperature gradients, by V. A. Mukhin and others
Solution of an equation of gas motion in a rectangular channel with friction and heat transfer, by Yu. I. Danilov and B. M. Galitseiskii
Heat and mass transfer in evaporation processes, by A. V. Lykov.

JOURNAL OF PHYSICS, 1961, NO. 3: 12 Apr 63 [53]p. 6 refs. FTD-TT-62-1663.
Order from OTS or SLA $5.60 63-19327

Unedited rough draft trans. of [Wu Li T'ung Pao (Chinese People's Republic)] 1961, no. 3, p. 89-110.

DESCRIPTORS: Physics, Time, *Timing devices, *Atomic clocks, *Dielectrics, *Polarization, *Electroluminescence.

Contents:
Time, time standards, and the atomic clock, by Wang Tien-chuan
The polarization phenomenon in dielectrics, by Lee Chung-chon
Electroluminescence, by Fan Shi-wee.

JOURNAL OF ENGINEERING PHYSICS, 1963, VOL. 6 NO. 1: SELECTED ARTICLES. 6 May 63, 313p. JPRS: 19046.
Order from OTS $5.00 63-21746

Trans. of #Inzhenerno Fizicheskii Zhurnal (USSR) 1963, v. 6, no. 1, p. 3-137.

DESCRIPTORS: *Physics, *Engineering, Heat transfer, Gases, Boundary layer, Electric furnaces, Diffusion, Ignition, *Thermodynamics, Driers (Apparatus), Nozzles, Thermistors, Partial differential equations, Steam, Generators, Cavitation, Dielectrics, Reactor kinetics, Supersonic flow, Moisture, Cements, Cooling, Molybdenum compounds, Silicides.

Contents:
Turbulent heat and mass exchange on a plate with the porous suction and injection of various gases, by by V. P. Motulevich.
Some results of investigation of the performance of an electric-arc heater with gas-stabilized discharge, by V. I. Sergeev and others
Diffusion processes and characteristics of the ignition of gas mixtures by an incandescent body, by L. N. Khitrin
Determination of the properties of little-investigated substances on the basis of thermodynamic similarity, by Ya. Z. Kazavchinskii
Mass exchange in the connection drying of fabric with the employment of Nozzle blowing, by O. A. Bunin
A method and an installation for linear heating, by L. M. Gal'perin
The thermal intertia of a thermistor in circuits for the measurement of pulsatic values, by N. V. Antonishin
The influence of elastic capacities on the stability of the operating process in steam-generation tubes, by I. I. Morozov and V. A. Mal'kov
Concerning the influence of a wall on the process of caviatation-bubble collapse, by G. A. Khoroshev
Concerning the spark temperature in the puncture of solid dielectrics, by V. I. Obukhov abd A. I. Lisitsyn
Kinetics of a reactor with linearly rising reactivity, by I. G. Morozov and others
The possibility of interferometric investigation of gaseous heterogeneities with uneven density distribution, by V. A. Emel'yanov
Certain approximate solutions of the equation of heat conductivity and the wave equation for bodies of revolution and plates, by V. I. Makhovikov
Application of energy diagrams of drying to analyze the binding of moisture with cement stone, by V. M. Kazanskii
Calculation of multichamber apparatus with fluidized bed for cooling fine grain materials, by A. P. Baskakov
Study of heat conduction of molybdenum silicides, by V. S. Neshpor, and I. G. Barantseva
Rate of movement of the spark in the electric arc heater, by V. I. Krylovich
Generalized calculation of the coefficient of effectiveness of fins and pins, by A. L. Lubny-Gertsyk and N. A. Bohkova
All-Union conference on the Automation of Drying processes in Industry and Agriculture, by V. L. Shevel'kov
Conference of readers of "Engineering Physics Journal" and the international journal "Heat and Mass Transfer" in kiev.
Aid to the reader: new book, by R. A. Dolinskaya.

Sall, A. O.
ON THE THRESHOLD SUSCEPTIBILITY OF THE SELECTIVE OPTICO-ACOUSTIC RECEIVER OF RADIATION. [1962] [5]p. 7 refs. USASIA Trans. Log no. 1189.
Order from OTS or SLA $1.10 62-33408

Trans. of [Zhurnal Tekhnicheskoi Fiziki] (USSR) 1959, v. 29, no. 3, p. 344-345.

DESCRIPTORS: Sensitivity, *Optical equipment, *Microphones, *Electromagnetic waves, Sound, Thermodynamics, Acoustic equipment, Equations.

A formula is derived for the calculation of the threshold of sensitivity of the optico-acoustic receiver of radiation by limiting thermodynamic fluctuations of a portable microphone system. (Author)

Acoustics

DEVICE FOR ABSORPTION OF SOUND, tr. by J. B. 5 Dec 62, 11p. (figs. omitted).
Order from OTS or SLA $1.60 63-13741

Trans. of Belgium patent 524,931, by Construction Carton Bois - C. C. B., France, appl. 8 Dec 53, granted 31 Dec 53, printed and pub. 13 Apr 56. (The invention was partly the object of a pat. appl. filed in France on 18 Nov 53. Another portion of the invention was also the object of a pat. appl. filed in France on 16 Apr 52, not yet granted).

DESCRIPTORS: *Sound, Absorption, *Acoustic insulation.

The object of the present invention is a device for the absorption of sound, intended for improving the acoustics of halls, and for other uses. This device consists of a cellular element whose cells are covered with felt or similar material and at least one of its surfaces (sides) is provided with openings such as holes or slots facing said cells. (Author)

Aleksandrov, I. A.
THE PHYSICAL NATURE OF THE "SOUND OF ROTATION" OF A SHIP'S PROPELLER IN THE PRESENCE OF CAVITATION. [1962] [8]p. 5 refs. [DSIR] NLL M.8994.
Order from OTS or SLA $1.10 63-15224

Trans. of #Akusticheskii Zhurnal (USSR) 1962, v. 8, no. 1, p. 34-41.

DESCRIPTORS: *Sound, *Propeller noise, *Cavitation noise, Propellers (Marine), Cavitation, Acoustic properties, Hydrodynamics, Model tests.

Some results are presented of an experimental investigation of the spectrum characteristics of the noise of propellers under moored conditions. On the basis of these experimental data the assumption is made that the existence of discrete components in the low-frequency part of the spectrum, the harmonics of the "sound of rotation" in particular, is due to the emission of the aggregate of cavitation bubbles under cavitation conditions. (Author)

Glotov, V. P., Kolobaev, P. A., and Neuymin, G. G.
STUDY OF SOUND SCATTERING BY BUBBLES PRODUCED IN SEA WATER BY ARTIFICIAL WIND AND OF THE STATISTICAL DISTRIBUTION OF THE SIZES OF BUBBLES. [1962] [7]p. 6 refs. [DSIR] NLL M 8912.
Order from OTS or SLA $1.10 63-15171

Trans. of #Akusticheskii Zhurnal (USSR) 1961, v. 7, no. 4, p. 421-427.

DESCRIPTORS: *Underwater sound, Sound, *Scattering, Sea water, Wind, Gases, Bubbles, Statistical distributions.

A study has been made of the frequency relation of sound scattering by a mixture of gas bubbles in sea water in a frequency band of 20-100 kc/s. The mixture was produced in a storm tank with artificial wind. Wind velocity varied in the 6-15 m./sec. range. Parallel with acoustic measurements photographs of the bubbles were taken and the statistical distribution of their sizes affecting the frequency relation of sound scattering was determined. (Author)

Golenkov, A. N.
THE CALIBRATION OF INFRASONIC HYDROPHONES BY THE NULL METHOD. 29 Mar 63, 17p. 9 refs. JPRS: 18442.
Order from OTS $0.50 63-21457

Trans. of [Komitet Standartov, Mer i Izmeritel'nykh Priborov. Trudy Institutov Komiteta] (USSR) 1962, no. 61(121) p. 47-57.

DESCRIPTORS: *Hydrophones, *Calibration, Acoustics, *Underwater sound equipment, Transformers, Design.

This paper describes a model installation for the calibration of infrasonic hydrophones by an electromagnetic balancing method. The sound pressure existing in a chamber is determined by this method after balancing of the pressure by an external electrodynamic force and the necessity for the determination of the acoustic impedance is eliminated, permitting a considerable simplification of the calibration procedure.

Sirotyuk, M. G.
A FOCUSING ULTRASOUND CONCENTRATOR MADE OF SOLID MATERIAL. [1962] [5]p. 4 refs. [DSIR] NLL M. 8995.
Order from OTS or SLA $1.10 63-15223

Trans. of #Akusticheskii Zhurnal (USSR) 1962, v. 8, no. 1, p. 124-128.

DESCRIPTORS: *Focusing, *Ultrasonic equipment, Sound, Liquids, Cavitation, *Sound transmission.

The possibility is shown of using a solid as a focusing device with subsequent transmission of the focused sound to a liquid, which in some cases may be more advantageous than using the liquid itself for focusing. (Author)

Tamm, K. and Weiss, O.
INVESTIGATIONS OF PERIODIC WAVES, EXPONENTIAL AND COMPLEX NEAR FIELDS IN BOUNDED SOLIDS. [1962] 33p. 13 refs.
Order from SLA $3.60 62-20333

Trans. of Acustica (Switzerland) 1959, v. 9, p. 275-288.

DESCRIPTORS: *Sound transmission, Mechanical waves, Propagation, *Wave transmission, Sheets, Vibration, Velocity, Damping, Energy, Solids, Shear stresses, Liquids, Equations.

The boundary conditions for the basic elastic equations describing the vibrations of a bounded solid cannot be satisfied by assuming periodic waves only. Waves with complex and real propagation constants are also required. After consideration of solved and unsolved vibration problems all waveforms occurring in an infinite homogeneous, nondissipative, plate are discussed. In addition to the propagation factors: phase velocity, damping, group velocity, and energy flow, the distributions of stress and velocities across the section are investigated. Differences in the propagation of sound in a medium free of shearing stress and in a solid are pointed out. (Author)

Weiss, O.
ON THE PROPAGATION OF SOUND IN DISSIPATIVE MEDIA WITH COMPLEX SHEAR AND BULK MODULUS. [1962] 31p. 4 refs.
Order from SLA $3.60 62-20331

Trans. of Acustica (Switzerland) 1959, v. 9, p. 387-398.

DESCRIPTORS: *Sound transmission, Mechanical waves, *Wave transmission, Propagation, Sheets, Elasticity, Liquids, Absorption, Continuous media, Equations.

Topics include: Compression waves, shear and dilatation waves (primary waves) in a dissipative medium; compression wave propagation in a homogeneous liquid layer (free of shearing stress), bounded absorptively with compression losses; wave propagation in an infinite plate with complex shear and bulk modulus; expansion of the formulas for the non-dissipative plate; numerical calculation of the propagation constant; and, discussion of the computed attenuation and phase velocity of the single modes of a rubber-elastic plate with shear losses. (See also 62-20333)

Electricity and Magnetism

Engel, A. V. and Steenbeck, M.
DISCHARGE OF ELECTRICITY IN GASES: THE ARC COLUMN [AND] EFFECT OF A MAGNETIC FIELD ON THE COLUMN. [1962] 27p.
Order from SLA $2.60 63-10897

Trans. of mono. Elektrische Gasentladungen [Berlin] 1934, sects. 61-62, p. 138-152.

DESCRIPTORS: Gases, *Electric discharges, Electric arcs, Glow discharges, Magnetic fields, Mercury, Vapors, Electrons.

Steingroever, E.
MAGNETOMETRIC MEASUREMENT OF DEMAGNETIZATION CURVES OF PERMANENT MAGNETS. 4 Oct 50, 4p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-20342

Trans. of Arch[iv] f[ür] Elektrotech[nik] (Germany) 1949, v. 39, [no. 6] p. 391-394.

DESCRIPTORS: *Magnets, Magnetic properties, Measurement, *Magnetometers, Stability.

The suitability of magnetometers for the measurement of the demagnetization curve of a permanent magnet is pointed out and its determination shown by four magnetometric points of measurement on a single specimen. The values of the magnetometric demagnetization factor for the dimensional relationships 1:d = 0.1 – 10 are estimated. New diagrams B(H) – and I(H) are given for the plotting of the points of measurement. (Author)

Electronics

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIOPHYSICS SERIES, 1962, VOL. 5, NO. 5, 22 Apr 63, 493p. JPRS: 18823. Order from OTS $6.00 63-21632

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1962, v. 5, no. 5, p. 839-1044.

DESCRIPTORS: Periodicals, *Electronics, *Radio astronomy, Ionosphere, Electron density, Cosmic rays, Galaxies, Solar eclipses, Sun, Radio signals, Extraterrestrial radio waves, Moon, Surface properties, Oscillators, *Plasma physics, Anisotropy, Charged particles, Electromagnetic waves, Propagation, Electromagnetic wave reflections, Diffraction, Refraction, Resonance, High frequency, Low frequency, Electromagnetic fields, Radiometers, Electron beams, Electron optics, Detectors, Delay circuits, Helixes, Waveguides, Waveguide couplers, Oscillation, Control systems, Servomechanisms, Electrical networks, *Trigger circuits, *Computer systems components, Ferroelectricity, Dielectrics, Magnetrons, Nonlinear systems, Harmonic analysis.

Contents:

Investigation of electron density irregularities in the ionosphere by radioastronomical methods and with satellites, by L. M. Erukhimov
Methods for measuring spatial variations of the spectrum of cosmic radio emission, by G. G. Getmantsev, and V. A. Razin
Observation of total solar eclipse of 15 Feb 61 on 22 and 83 cm, by L. I. Matveenko and R. L. Sorochenko
Results of precision measurements of the radio emission from the sun on 1.6 cm, by S. A. Kamenskaya and others
New possibility of determining the density of the moon's surface rocks, by V. S. Troitskii
Frequency of the field of an oscillator moving in an anisotropic medium, by N. A. Mityakov
Radiation from a charge moving in an inhomogeneous medium, by V. Ya. Fidman
Propagation of plane electromagnetic waves in periodically nonstationary magnetoactive, by V. N. Lugovoi
Reflexion of waves from arbitrary moving inhomogeneity, by N. S. Stapanov
Diffraction of radio emission with continuous spectrum on inhomogeneities of a plane layer, by Yu. A. Ryzhov
On the theory of refraction in a stratified inhomogeneous medium, by V. I. Tatarskii
Parametric interaction of charged or quasi-neutral objects with inhomogeneous high-frequency fields, by M. A. Miller
Low-frequency boundary of the high-frequency quasi potential in a positive-column plasma, by K. S. Golovanivskii and A. A. Kuzovnikov
Optimum observation time in the measurement of weak signals, by A. G. Kislyakov
Experimental investigation of methods for the formation of trochoidal electron beams by photography of electron trajectories, by V. A. Flyagin and T. B. Pankratova
Concerning the detector properties of a plasma, by G. A. Sobol'
Investigation of certain properties of a slow-wave system consisting of a plasma rod surrounded by a helix, by S. M. Levitskii and N. S. Baranchuk
Use of the method of coupled waves in the calculation of waveguides with diaphragms, by A. P. Ol'shanskii
Oscillations of coupled systems with slowly varying parameters, by L. A. Ostrovskii
Investigation of self-isolations of simplest relay system with correction, by A. I. Cherepanov
Dynamics of servomechanism with backlash upon introduction of nonlinear correction, by M. I. Rabinovich
Application of certain special operations in the problem of the analysis and synthesis of linear electric networks, by K. A. Mishina and A. S. Alekseev
Ternary flip-flops using parametric oscillators, by S. A. Akhmanov and A. S. Roshal'
Dynamic delays, registers, and triggers without information shift, by M. Ya. Eingorin
Energy losses of electric and magnetic charges in a ferrodielectric, by B. M. Bolotovskii and V. S. Voronin
Adiabatic approximation in the analysis of the magnetron type devices, by V. E. Nechaev
Natural and forced oscillations in a nonlinear circuit with asymmetrical characteristic, by A. V. Turik
Investigation of periodic modes by the harmonic-balance method in automatic control systems containing unstable elements, by I. N. Pechorina

USSR ELECTRONICS: [SELECTED] TRANSLATIONS. 12 Apr 63 [27]p. 10 refs. JPRS: 18679. Order from OTS $0.75 63-21566

Trans. of #Radiotekhnika i Elektronika (USSR) 1963, v. 8, no. 1, p. 8-23.

DESCRIPTORS: *Electronics, *Information theory, *Coding, Errors, Corrections, Arithmetic operations, Computers, Data transmission systems, Digital systems, Synthesis, Memory devices, Circuits, Probability, *Computer systems components.

Contents:

On the arithmetic correcting codes, by E. T. Mironchikov and V. D. Kolesnik
Problem of search in a system with finite number of positions, by K. Sh. Zigangirov.

Bogdanovich, L. S., Rukhadze, A. A., and Silin, V. P.
ON THE FLUCTUATIONS OF AN ELECTROMAGNETIC FIELD IN A NONEQUILIBRIUM PLASMA. 7 Feb 63, 21p. 8 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R46. When supply exhausted, order from OTS or SLA $2.60, 63-10860

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. [Rept]-A-80, 1962.

DESCRIPTORS: *Electromagnetic fields, Motion, *Plasma physics, Dielectric properties, Permeability, Electric fields, Statistical functions.

The study examines questions of the fluctuation of an electromagnetic field in a stable, nonequilibrium plasma, and, in particular in an anisothermal plasma and in a system of mutually penetrating beams. For an anisothermal plasma spatial and temporal correlation functions of the electric field are found. The spectral density of the fluctuation of the electric field in a system of mutually penetrating beams is investigated. It is shown that as the velocity of the beams approaches some critical value, corresponding to the excitation condition of the kinetic instabilities, the fluctuations of the electromagnetic field increase without limit in such a plasma. (Author)

Issendorff, H. v. and Fleischmann, R.
POLARIZATION OF THE FIELD EMITTED ELECTRONS FROM LONGITUDINALLY MAGNETIZED IRON. [1962] 12p. 11 refs.
Order from SLA $1.60 63-10855

Trans. of Zeitschrift für Physik (West Germany) 1962, v. 167, p. 11-19.

DESCRIPTORS: *Field emission, *Electrons, Electron beams, *Polarization, *Ferromagnetic materials, Iron.

Kopitzki, Conrad and Stier, Hans-Erhart.
AVERAGE VELOCITY OF PARTICLES EMITTED IN THE CATHODIC SPUTTERING OF METALS. 6 June 62, 5p. 3 refs.
Order from SLA $1.10 63-10120

Trans. of Z[eitschrift] für Naturforschung (West Germany) 1961, v. 16a, p. 1257-1259.

DESCRIPTORS: Metals, Particles, *Ion bombardment, Velocity, *Secondary emission, Cathodes.

Ramazashvili, R. R., Rukhadze, A. A., and Silin, V. P.
ON THE RATE OF LEVELING OF TEMPERATURE OF CHARGES PARTICLES IN A PLASMA. 7 Feb 63, 17p. 11 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R47. When supply exhausted, order from OTS or SLA $1.60, 63-10849

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. [Rept]-A-82, 1962 [#Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1962, v. 43, no. 4, p. 1323-1330].

DESCRIPTORS: *Temperature, Relaxation time, *Charged particles, *Plasma physics.

The paper examines problems of temperature relaxation, both in a gas of charged particles of one type, and between gases of particles of different types in a plasma, with regard to interaction of the particles with plasma waves. It is shown that the times of relaxation of temperatures in a highly anisothermal plasma may be considerably smaller than times of relaxation obtained without regard to the interaction of particles with waves. (Author)

Silin, V. P.
ON THE THEORY OF TRANSPORT PROCESSES IN A PLASMA ACROSS A MAGNETIC FIELD. 7 Feb 63, 17p. 4 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R48. When supply is exhausted, order from OTS or SLA $1.60, 63-10861

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. [Rept]-A-83, 1962.
Another trans. is available from OTS or SLA $1.60 as UCRL Trans-869 (L) Sep 62, 12p.

DESCRIPTORS: *Transport properties, *Plasma physics, Magnetic fields, Plasma oscillations, Theory.

The theory of transport phenomena in a plasma across a constant magnetic field is set forth. An important new feature is the taking into account of the interaction of the particles of the plasma with longitudinal oscillations. It is shown that, for sufficiently large ratios of the temperatures of the electrons and ions, the effect of the interaction of the particles with plasma oscillations results in a substantial modification of the transport coefficient. Conditions of applicability are shown, comprising, firstly, the possibility of using exitation theory with respect to the parameter defining the magnitude of the interaction of the particles of the plasma; secondly, limitation to magnetic fields that are not too large and that actually do not effect the event of interaction; and, thirdly, the usual condition of expansion in inverse powers of the magnetic field, corresponding to the smallness of the frequency of the collisions in comparison with the Larmor frequency. (Author)

Stratonovich, R. L.
TOPICS IN THE THEORY OF RANDOM NOISE, VOL. 1, REV. ENG. ED., tr. by Richard A. Silverman. Vol 3 of Monographs and Texts on Mathematics and Its Applications. 1963, 292p. 12 refs.
Order from GB $12.50

Trans. of mono. [Izbrannye Voprosy Teorii Flyuktuatsii v Radiotekhnike, v. 1, Moscow, 1961, 557p.]

DESCRIPTORS: Electronics, *Noise (Radio), Applied mathematics, *Statistical functions, *Statistical processes, Transformations (Mathematics), Functions, *Radio signals, Detection.

Vollerner, N. F., Gatkin, N. G., and Karnovskii, M. I.
THE FREEDOM FROM INTERFERENCE OF A RECEIVER FORMING A COMBINATION OF READINGS OF AN AUTO-CORRELATION FUNCTION. [1962] [9]p. 6 refs. [DSIR] NLL M. 8982.
Order from OTS or SLA $1.10 63-15229

Trans. of Radiotekhnika (USSR) 1962, v. 17, no. 2, p. 3-9.

DESCRIPTORS: Radio interference, *Radio reception, *Radio receivers, Correlation techniques, *Statistical functions. Signal-to-noise ratio.

Molecular Physics and Spectroscopy

Astoin, N., Sanson, L. and others.
ABSORPTION SPECTRA OF CARBON DIOXIDE AND OF NITROGEN IN THE REGION FROM 160 TO 1000 Å. [1962] 4p. 10 refs.
Order from SLA $1.10 63-10246

Trans. of French language article from C. N. R. S., Bellevue, n. d.

DESCRIPTORS: *Ultraviolet radiation, *Carbon dioxide, Nitrogen, Ions, *Absorption spectrum.

Barachevskii, V. A., Kholmogorov, V. E. and others.
ADSORPTION SPECTRA AND ELECTRON PARAMAGNETIC RESONANCE SPECTRA OF POSITIVE IONS OF ACENES, FORMED DURING VACUUM ADSORPTION. [1963] 5p.
Order from ATS $7.50 ATS-52Q69R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 147, no. 5, p. 1108-1111.

DESCRIPTORS: *Adsorption, *Paramagnetic resonance, Ions, *Anthracenes.

Finkelnburg, W. and Peters, Th.
CONTINUOUS SPECTRA. [1963] 69p.
Order from ATS $55.50 ATS-63Q67G

Trans. of Handbuch der Physik (West Germany) 1955, v. 28, Spectroscopy II, p. 79-145.

DESCRIPTORS: Spectroscopy, *Continuous spectrum.

Giacometti, G., Nordio, P. L., and Rigatti, G.
ELECTRON STRUCTURE AND SPECTRA OF CHLORANIL AND p-PHENYLENEDIAMINE (Struttura Elettronica e Spettri del Cloranile e della p-Fenilendiammina). [1962] 9p. 16 refs.
Order from SLA $1.10 62-18706

Trans. of Nuovo Cimento (Italy) 1962 [ser. 10] v. 23, no. 2, p. 433-439.

DESCRIPTORS: Chlorine compounds, *Quinones, Benzenes, *Amines, Molecular structure, Electrons, *Atomic orbitals, *Atomic energy levels, Spectrographic analysis, Resonance absorption, Spectra (Visible and ultraviolet).

The prime π electron levels of chloranil, p-phenylenediamine and their respectively negative and positive ions were evaluated by the semi-empirical LCAO, MO. SCF method.

Oldenberg, O.
THE FLUORESCENCE OF MERCURY-NOBLE GAS BANDS [He]. [1962] 26p. 32 refs.
Order from SLA $2.60 63-10393

Trans. of Zeitschrift für Physik (Germany) 1928, v. 47, p. 184-202.

DESCRIPTORS: *Fluorescence, *Mercury, *Rare gases, Excitation, Molecular structure, Molecular spectroscopy, Absorption, Radiation effects.

Osipov, D. I.
CONSERVATION OF THE FORM OF THE MAXWELLIAN DISTRIBUTION IN A RELAXING GAS [O Sokhranenii Formy Maksvellovskogo Raspredeleniya v Relaksiruyushchem Gaze]. Jan 63 [2]p. 3 refs.
Available from AIAA in Its Journal, v. 1, no. 1, $5.00.

Trans. of Moscow U. Vestnik. [Seriya 3: Fizika, Astronomiya] (USSR) 1961 [v. 16] no. 1, p. 13-15. Another trans. is available from OTS or SLA $1.10 as 62-33206, NASA TT F-8173, 30 Oct 61 [6]p.

DESCRIPTORS: *Gases, Electrons, *Relaxation time, Thermodynamics, Statistical functions, Differential equations, Fluid dynamics, Velocity.

For abstract see Technical Translations 9: 768, 1963.

Srb, I. and Vasko, A.
THE ABSORPTION OF SPECTRUM OF AMORPHOUS SELENIUM IN THE INFRARED REGION. [1963] 4p.
Order from ATS $6.25 ATS-13Q68R

Trans. of [Chekhoslovatskii Fizicheskii Zhurnal] 1961, v. 11, no. 9, p. 664-667.

DESCRIPTORS: Infrared spectroscopy, *Absorption spectrum, *Selenium.

Ulmschneider, D. and Goubeau, J.
THE INFRARED SPECTRUM OF DIMETHYLBORIC ACID. 18 Sep 58, 4p. 9 refs.
Order from SLA $1.10 63-10630

Trans. of Zeitschrift fur Physikalische Chemie [Frankfurt] (West Germany) 1958, Neue Folge, v. 14, p. 56-60.

DESCRIPTORS: *Methyl radicals, *Boric acids, *Deuterated compounds, Spectra (Infrared), Infrared spectroscopy, Molecular properties, Vibration.

The infrared spectrum of gaseous dimethylboric acid (Me_2BOH) and of monodeuterodimethylboric acid (Me_2BOD) was taken in the range of 300-4000 cm.$^{-1}$ and an assignment made of the molecular vibrations. (Author)

Optics

Grum-Grzhimailo, S. V.
APPARATUS FOR THE STUDY OF OPTICAL ANOMALIES IN SYNTHETIC CORUNDUM AND OF ITS ORIENTATION (Pribory dlya Issledovaniya Opticheskikh Anomalii Sinteticheskogo Korunda i Ego Orientirovki). Mar 63 [27]p. (fig. omitted) 12 refs. RTS-2147.
Order from OTS or SLA $2.60 63-15946

Trans. of Akademiya Nauk SSSR. Institut Kristallografii. Trudy, 1953, v. 8, p. 165-188.

DESCRIPTORS: *Optical equipment, Optical properties, Synthetic stones, *Corundum, Crystal structure, Optical equipment components, Design.

The article reviews instruments, used in industry, for determining the orientation in corundum crystals: in boules, half-boules, plates, semi-fabricates and jewel bearing. With the aid of these instruments, optical anomalies in corundum and in articles made from it can be studied in convergent and parallel polarised light. One section of the paper deals with the application of optical control to the quality of jewel bearing and to their orientation. (Author)

Zverev, V. A., Mosalov, I. V. and others.
A SPECTRAL ANALYSER OF RECORDINGS OF PROCESSES. [1962] [12]p. 1 ref. [DSIR] NLL M. 10001.
Order from OTS or SLA $1.60 63-15218

Trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1962 [v. 7] no. 1, p. 110-117.

DESCRIPTORS: *Spectrum analyzers, Design, Operation, *Optical instruments, *Correlation techniques, Statistical functions, Recording devices.

A description is given of the operating principle, design and working of an optical correlation spectrum analyser. The resolving capability for analysis is constant in range and corresponds to averaging recordings in terms of 100 mm., which makes it possible to obtain 250 read out values in the spectrum. The dynamic range of the analyser is not less than 40 db. The spectra of recordings of processes can be recorded on an auto-recorder of the Neyman type, EPP-09, and observed on the screen of an electronic oscillograph. (Author)

Solid State Physics

Boas, W.
ELASTIC BEHAVIOR OF SINGLE AND MULTIPLE CRYSTALS OF TIN (Zum Elastischen Verhalten von Zinn- Ein- und -Vielkristallen). [1962] [10]p. (foreign text included) 8 refs.
Order from SLA $1.10 62-20281

Trans. of Helvetica Physica Acta (Switzerland) 1934, v. 7, p. 878-883.

DESCRIPTORS: *Crystals, *Single crystals, *Metal crystals, *Tin, *Elasticity, Crystal structure, Statistical analysis.

The orientation dependence of the elasticity- and torsion-modulus of the tin crystal is indicated. By taking the mean over the entire orientation range the moduli of the quasi-isotropic polycrystal are calculated and compared with experience. (Author) (See also 62-20280)

Friedmann, H.
CHARACTERISTIC ENERGY LOSSES OF MEDIUM-FAST ELECTRONS IN Se LAYERS OF VARIOUS STRUCTURES. [1963] 11p.
Order from ATS $15.00 ATS-74Q67G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1956, v. 11a, p. 373-379.

DESCRIPTORS: *Selenium, *Electrons, Energy, Semiconducting films, Crystal structure.

Gertsriken, S. D., Dekhtyar, I. Ya., and Kumok, L.M.
A STUDY OF DEFECTS OF THE CHROMIUM CRYSTALLINE STRUCTURE IN RESPECT TO THE EXTENT OF DEFORMATION. [1962] 5p. 4 refs.
Order from OTS or SLA $1.10 63-10866

Trans. of [Akademiya Nauk URSR, Kiev. Instytut Metallofizyky. Sbornik Nauchnykh Rabot, 1961, v. 12, p. 98-101].

DESCRIPTORS: *Chromium, Crystal structure, *Deformation, *Crystal lattice defects, *Creep.

Gladkovskii, V. A.
THE COMPRESSIBILITY OF METALS AS A PERIODIC FUNCTION. 1962, 6p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5306

Trans. of Chelyabinskii Nauchno-Issledovatel'skii Institut Metallurgii. Sbornik Nauchno-Tekhnicheskikh Trudov (USSR) 1960, no. 2, p. 163-167.

DESCRIPTORS: *Metals, Compressive properties, Shock waves, Propagation, Electron transitions, Functions.

Gorlich, P., Karras, H., and Lehmann, R.
OPTICAL PROPERTIES OF ALKALINE EARTH HALIDES. III. GORLICH, KARRAS (10, 44). [1962] 4p.
Order from SLA $1.10 63-10255

Partial trans. of Physica Status Solidi (Germany) 1961, v. 1, no. 5, Sonderdruck, p. 421-423.

DESCRIPTORS: Optical properties, *Halides, *Alkaline earth compounds, *Crystal lattice defects, Color centers, Crystal structure, Discoloration.

Gyulai, Z.
ON THE EXCITATION PROCESS DURING THE ABSORPTION OF LIGHT IN CRYSTALS. [1962] 13p. 5 refs.
Order from SLA $1.60 63-10675

Trans. of Zeit[schrift] f[ür] Physik (Germany) 1926, v. 39, p. 636-643.

DESCRIPTORS: Sodium compound, Chlorides, *Crystals, *Light, *Absorption, Excitation, Absorption spectra, Temperature, Phosphorescence.

Huber, A. and Schmid, E.
DETERMINATION OF THE ELASTIC PROPERTIES OF QUASI-ISOTROPIC POLYCRYSTALS BY TAKING THE MEAN (Bestimmung der Elastischen Eigenschaften Quasiisotroper Vielkristalle durch Mittelung). [1962] [15]p. (foreign text included) 5 refs.
Order from SLA $1.60 62-20280

Trans. of Helvetica Physica Acta (Switzerland) 1934, v. 7, p. 620-627.

DESCRIPTORS: *Crystals, *Elasticity, Measurement, Statistical analysis, Crystal structure.

The moduli of the random, quasi-isotropic polycrystal are calculated from the orientation dependence of the elasticity- and torsion- modulus of cubic and hexagonal crystals by taking the mean over the entire orientation range. (Author)

Justi, E., Kramer, J., and Schulze, Reinhart.
GALVANOMAGNETIC EXPERIMENTS CONCERNING THE MECHANISM OF ELECTRICAL CONDUCTION IN SINGLE CADMIUM CRYSTALS. [1962] 49p. 24 refs.
Order from SLA $4.60 63-10656

Trans. of Physik[alische] Zeitschr[ift] (Germany) 1940, v. 41, p. 308-325.

DESCRIPTORS: *Cadmium, *Single crystals, Electromagnetic properties, *Electrical conductance, Magnetic fields, *Resistance (Electrical), Temperature, Measurement.

Khlapova, A. N. and Burovaya, E. E.
RONTGENOGRAPHIC AND CRYSTALLO-OPTICAL INVESTIGATION OF FUSIONS OF THE SYSTEM Na_2SO_4-Na_2CO_3. [1963] 36p.
Order from K-H $36.00 K-H-8653

Trans. of #Zhurnal Neorg[anicheskoi] Khim[ii] (USSR) 1957, v. 2 [no. 8] p. 1864-1882.

DESCRIPTORS: *X-ray diffraction analysis, Crystals, *Sodium compounds, *Sulfates, *Carbonates, Optical analysis.

Klockman, V. R., Zinov'eva, V. K., and Tseveleva, I. A.
DETERMINATION OF THE COEFFICIENT OF CRYSTALLIZATION OF ThB (Pb) DURING ITS DISTRIBUTION BETWEEN THE FUSTION AND CRYSTALS OF ISOMORPHOUS SALTS. [1963] 11p.
Order from K-H $11.00 K-H 5866 a

Trans. of #Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1955, no. 5, p. 800-804.

DESCRIPTORS: *Crystallization, *Thorium compounds *Borides, *Lead, Crystals, Crystal structure, Salts.

Lesnik, A. G. and Skvorchuk, V. P.
APPLICATION OF THE THEORY OF REGULAR SOLUTIONS TO THE ANALYSIS OF ALPHA $\rightleftarrows$ GAMMA EQUILIBRIUM CURVES AND FUSIBILITY CURVES OF IRON-ALUMINIUM, IRON-VANADIUM AND IRON MOLYBDENUM SYSTEMS. [1962] 8p. 11 refs.
Order from OTS or SLA $1.10 62-18645

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1960, no. 10, p. 1408-1412.

DESCRIPTORS: *Iron alloys, *Molybdenum alloys, *Vanadium alloys, *Aluminum alloys, Phase studies, Thermodynamics, Numerical analysis.

Lieser, K. H. and Pfluger, C. E.
PHASE FORMATION IN THE SYSTEM $AlCl_3$/HCl/ MESITYLENE. [1963] 6p.
Order from ATS $6.25 ATS-62Q67G

Trans. of Chem[ische] Ber[ichte] (West Germany) 1960, v. 93, p. 181-186.

DESCRIPTORS: *Phase studies, *Aluminum compounds, Chlorides, *Hydrochloric acid, *Benzenes, *Mesitylene.

Natta, Giulia, Carradini, Paolo, and Bassi, Ivano Walter.
THE CRYSTAL STRUCTURE OF SOME POLY-ALPHA-OLEFINS WHICH ARE ISOTACTIC. [1960] 11p. 12 refs.
Order from SLA $1.60 60-18496

Trans. of Accad[emia] Naz[ionale del] Lincei. Class[e di] Sci[enze] Fis[iche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1955 [ser. 8] v. 19, p. 404-411.
Another trans. is available from OTS or ETC $1.85 as 61-17348, MTWL-855/1, 14p.

DESCRIPTORS: *Crystal structure, *Polymers, X-ray diffraction analysis, *Ethylenes.

Reinhold, H. and Mohring, H.
CONDUCTION OF ELECTRICITY AND DIFFUSION IN SEMIMETALLIC ALLOYS. I. $Cu_{2-x}Se$. [1962] 12p. (figs. omitted) 38 refs.
Order from SLA $1.60 62-20246

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig] (Germany) 1937, v. 38B, p. 221-244.

DESCRIPTORS: *Electrical conductance, *Diffusion, Alloys, *Copper alloys, *Selenium alloys, *Semiconductors, Thermoelectricity

Repinskii, S. M.
DETERMINATION OF SURFACE CONDUCTIVITY OF GERMANIUM IN CONTACT WITH A SOLUTION OF LOW CONDUCTIVITY. [1962] 5p. 1 ref.
Order from OTS or SLA $1.10 63-10250

Trans. of Leningrad U. Vestnik (USSR) 1962 [v. 17] no. 10 [Seriya Fizika i Khimii no. 1] p. 103-106.

DESCRIPTORS: Surface properties, *Germanium, *Electrical conductance, Solutions, Semiconductors, Measurement, Resistance (Electrical).

Richter, H. and Herre, F.
THE STRUCTURE OF SOLID AMORPHOUS AND MOLTEN SELENIUM IN THE TEMPERATURE RANGE OF -180 to 430° C. [1963] 16p.
Order from ATS $18.50 ATS-76Q67G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1958, v. 13a, p. 874-885.

DESCRIPTORS: Solids, Melting, *Selenium, Temperature, Crystal structure.

Rodin, A. M. and Surenyants, V. V.
THE DIFFUSION COEFFICIENT OF HELIUM IN TITANIUM. [31 Aug 61] 13p. 14 refs.
Order from OTS or SLA $1.60 63-10086

Trans. of Fizika Metallov i Metallovedenie (USSR) 1960, v. 10 [no. 2, p. 216-222].
Another trans. is available in German from T. I. B. $1.85 as 62-27070, 11p.

DESCRIPTORS: *Diffusion, *Helium, *Titanium, Rare gases, Metals, Tests, Test equipment, Helium group gases, *Gas diffusion.

A study was made initially of He concentrations liberated in a vacuum from thin layers of Ti deposited on a molybdenum substrat. Practically no He diffused into the molybdenum upon applying heat to the system. The dependence of the diffusion coefficient of He in Ti upon temperature was investigated. It shows that the He evolution has the same deviation as the theoretical curve, i.e., the evolution rate increases with a smaller given amount of gas in the metal. (Author)

Shalimova, K. V. and Andrushko, A. F.
ELECTRON AND X-RAY DEFRACTION STUDIES OF THE STRUCTURE OF HEAT TREATED POWDERS OF CADMIUM SULPHIDE. [1962] 7p. 8 refs.
Order from OTS or SLA $1.10 63-10657

Trans. of #Kristallografiya (USSR) [1962] v. 7, no. 3, p. 371-373.

DESCRIPTORS: *Cadmium compounds, Sulfides, Powders, Heat treatment, *Crystal structure, Phase studies, Electron diffraction analysis, X-ray diffraction analysis.

At temperatures below 490° to 520° both known modification of cadmium sulfide are stable. At higher temperatures the cubic modification changes to the hexagonal. The temperature of the transition in air is 525 ± 50 and in vacuum 495 ± 50. At temperatures above 700° in vacuum and in the air the process of recrystallization of finely dispersed powder occurs intensively; in this process, the size of the crystals of alpha cadmium sulfide increases from 0.1 to 1.0 to 10 to 30 micron or greater. In heating in air (520° to 660°) an intense oxidation of cadmium sulfide occurs with predominant formation of sulfates. After thermal treatment at temperatures above 700° the predominating impurity in powders is a structure-free oxide. (Author)

Smakula, Alexander.
ON THE DISCOLORATION OF ALKALI-HALIDE CRYSTALS BY ULTRAVIOLET LIGHT (Uber die Verfärbung der Alkalihalogenidkristalle durch Ultraviolettes Licht). [1962] 18p. 8 refs.
Order from SLA $1.60 63-10770

Trans. of Zeit[schrift] für Physik (Germany) 1930, v. 63, p. 762-770.

DESCRIPTORS: Discoloration, *Halides, *Crystals, *Ultraviolet radiation, Absorption, Lithium compounds, Rubidium compounds, Patassium compounds, *Color centers, Photochemistry.

This paper contains the absorption spectra for mode-one discoloration of the substances LiF, RbBr, and KI. Absolute values are given for the absorption constant $\mathcal{K}$ in the long-wavelength satellite of the first ultraviolet absorption-band for crystals of RbCl, RbBr, KBr, and KI at room temperature, and for KBr at -183° also. In the first ultraviolet absorption band of the alkali halides the absorption of every single light-quantum results in photochemical liberation of one discoloration center. (Neutral alkali atom loosely bound in some way to the lattice.) To any accumulation of these discoloration centers due to back-forming, however, there is a limit, determined by the individual properties of the crystal (temperature, foreign-ion content, and other latrice defects). (Author)

Takeda, Y. and Hurukawa, J.
HIGH-MOLECULAR-WEIGHT COMPOUNDS WITH SEMICONDUCTIVE PROPERTIES. [1963] 20p.
Order from ATS $22.85 ATS-84Q66J

Trans. of Kagaku (Japan) 1960, v. 15, no. 9, p. 725-735.

DESCRIPTORS: Molecular weight, *Semiconductors.

Zhukhovitskii, A. A. and Geodakyan, V. A.
DETERMINATION OF DIFFUSION COEFFICIENTS BASED ON THE ABSORPTION OF β-RADIATION [Opredelenie Koeffitsientov Diffuzii na Osnove Absorbtsii β-Izlucheniya]. [1963] 4p.
Order from ATS $6.00 ATS-35Q68R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1955, v. 102, no. 2, p. 301-304.
Another trans. is available from SLA as RT-3494, 5p.

DESCRIPTORS: *Diffusion, Absorption, Beta particles.

Theoretical Physics

Kravchenko, V.
NOBEL PRIZE WINNER: LEV DAVIDOVICH LANDAU. 30 Apr 63, 7p. JPRS: 18962.
Order from OTS $0.50 63-21710

Trans. of Nauka i Tekhnika (Latvian SSR) 1963, no. 2, p. 16-18.

DESCRIPTORS: *Physicists, Biographies, Physics, Theory, Helium, Liquefied gases, Quantum mechanics, Fluid mechanics.

Pugachev, Ya. I.
FORMS OF SOLUTIONS OF EINSTEIN'S EQUATIONS. Mar 63 [2]p. 7 refs.
Available from AIAA in Its Journal, v. 1, no. 3, $5.00

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1961, no. 1, p. 31-34.

DESCRIPTORS: Equations, *Gravity, *Tensor analysis, Relativity theory, Algebraic topology, Quantum mechanics, Conformal mapping, Differential geometry

Thermodynamics

Alimov, R. Z.
INTENSIFICATION OF CONVECTIVE HEAT AND MASS EXCHANGE IN PIPES USING A SWIRLING TWO PHASE FLOW (Intensifikatsiya Konvektivnogo Teplo- i Massoobmena v Trubakh s Pomoshch'yu Zavikhrennogo Dvukhfaznogo Potoka) tr. by Eugene E. Gruber Jr. [1962] [29]p. (foreign text included) 11 refs.
Order from OTS or SLA $2.60 AEC-tr-5513

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energetika i Avtomatika, 1962, no. 1, p. 101-110.

DESCRIPTORS: Pipes, Gas flow, Fluid flow, *Fluid dynamic properties, *Heat transfer, *Mass transfer, *Convection, Reynolds number, Centrifugal fields, Air, Water.

The present work deals with the investigation of heat and mass transfer from inner surfaces of hot pipes during swirling two phase flow. In this case the two phase mixture is air containing finely dispersed drops of water.

Fedorko, P. P.
CONVECTIVE HEAT EXCHANGE AND RESISTANCE IN THE MOTION OF AIR IN SHORT TUBES AT SMALL REYNOLDS NUMBERS, tr. by F. F. D. Roantree. June 61 [31]p. [DSIR] NLL M. 4888.
Order from OTS or SLA $3.60 63-19348

Trans. of Leningradskii Institut Inzhenerov Vodnogo Transporta. Trudy (USSR) 1957, v. 24, p. 162-174.

DESCRIPTORS: *Gas flow, Air, *Heat transfer, Convection, Resistance, Jet mixing flow, Turbulence, Boundary layer transition, Reynolds number, Cylindrical bodies, *Heat exchangers, Fluid mechanics

Geiseler, G. and Ratzsch, M.
THERMODYNAMIC PROPERTIES OF NITRYL CHLORIDE. [1962] 3p. 7 refs.
Order from SLA $1.10 63-10851

Trans. of Zeit[schrift für] Physik[alische] Chemie [Leipzig] (East Germany) 1957, v. 207, p. 138-140.

DESCRIPTORS: *Nitrogen compounds, *Oxychlorides, *Thermodynamics, Molecular structure.

Hermann, R.
HEAT TRANSFER AT FREE FLOW OF BIATOMIC GASES IN HORIZONTAL CYLINDER [Warmeubergang bei Freier Stromung am Wagrechten Zylinder in Zweiatomigen Gasen]. [1962] 22p. (refs. omitted).
Order from OTS or SLA $2.60 63-10867

Trans. from VDI-Forschungsheft (West Germany) 1936, no. 379.
Another trans. is available from SLA as 02082, 73p.

DESCRIPTORS: *Heat transfer, *Gas flow, *Convection, Cylindrical bodies, Boundary layer, Azimuth, Numerical analysis, Differential equations.

Morozov, V. G.
AN EXPERIMENTAL INVESTIGATION OF THE CESSATION OF FILM BOILING OF A LIQUID ON A SUBMERGED HEATING SURFACE. [1962] 7p. 15 refs.
Order from OTS or SLA $1.10 AEC-tr-5517

Trans. of Inzh[enerno]-Fiz[icheskii Zhurnal] (USSR) 1962, v. 5, no. 4, p. 15-19.
Other translations are available from ATS $9.75 as ATS-24P62R [1962] 6p. and from ICE in v. 3, no. 1 $15.00/year.

DESCRIPTORS: *Heaters, Surfaces, Boiling, Heat transfer, Methanols, Propanols, Carbon tetrachloride, *Film boiling, Nucleate boiling, *Chemical engineering.

Experimental data are presented on the cessation of film boiling of methanol, n-propanol, 95% ethanol, and carbon tetrachloride on a submerged heating surface. The treatment of the results is given in criterial form, and a comparison is made with the experiments of other authors. (Author)

Ruzinov, L. P. and Belov, S. F.
THERMODYNAMICS OF ZIRONIUM AND HAFNIUM CHLORIDES. [1962] 10p. 26 refs.
Order from OTS or SLA $1.10 63-10858

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1960 [v. 3] no. 6, p. 104-113.
Another trans. is available from OTS or SLA $1.60 as 62-13595, FTD-TT-61-75, 27 Oct 61 [16]p.

DESCRIPTORS: *Chlorides, *Hafnium compounds, *Zirconium compounds, Thermodynamics, *Thermochemistry, Chemical reactions.

For abstract see Technical Translations 7:706, 1962.

Shitsman, M. E.
THE PROBLEM OF CRITICAL HEAT EXCHANGE IN STEAM-GENERATING CHANNELS. [1963] 7p.
Order from ATS $10.50 ATS-26Q67R

Trans. of Inzh[enerno]-Fiz[icheskii] Zh[urnal] (USSR) 1962, v. 5, no. 9, p. 9-15.

DESCRIPTORS: Heat exchangers, *Steam, *Heat transfer.

Sterman, L. S., Morozov, V. G., and Kovalev, S. A.
AN INVESTIGATION OF THE HEAT EXCHANGE WHICH TAKES PLACE WHEN WATER AND ETHYL ALCOHOL ARE BOILED IN TUBES. [1962] 7p. 6 refs. T. 5219; [DSIR NLL] M 3456.
Order from OTS or SLA $1.10 62-24852

Trans. of Inzh[enerno] Fiz[icheskii] Zh[urnal] (USSR) 1959, v. 2, no. 10, p. 40-45.
Another trans. is available from OTS or SLA $1.60 as UCRL Trans-694, 30 June 61, 11p.

DESCRIPTORS: *Heat transfer, *Boiling, Water, Ethanols, Pipes, *Thermodynamics.

For abstract see Technical Translations 8: 79, 1962.

Traber, D. G., Pomerantsev, V. M. and others.
HEAT TRANSFER FROM A FLUIDIZED CATALYST BED TO A HEAT-EXCHANGE SURFACE. [1963] 9p.
Order from ATS $10.75 ATS-15Q67R

Trans. of #Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1962, v. 35, no. 11, p. 2386-2393.

DESCRIPTORS: *Heat transfer, *Catalysts, Fluidized solids, *Heat exchangers, Surfaces.

Truelsen.
THE POINT PRINCIPLE IN HEAT TRANSFER.
12 May 32, 2p.
Order from SLA $1.10 63-10446

Trans. of Technische Rundschau [und Allgemeine Industrie- und Handelszeitung] (Switzerland) 1932, 27 Apr, p. 20-21.

DESCRIPTORS: *Heat transfer, *Heat exchangers, Construction.

Zakharikov, N. A.
EFFECT OF NON-UNIFORMITY OF TEMPERATURE IN GAS FLOW ON HEAT EXCHANGE IN FURNACES, tr. by R. C. Murray. Aug 58 [14]p. 12 refs. [BISI] Trans. 1032; [Trans.] no. 4936; [DSIR] NLL M. 4081.
Order from OTS or SLA $1.60 62-24096

Trans. of Stal' (USSR) 1956, v. 16 [no. 10]p. 927-933.

DESCRIPTORS: Temperature, *Gas flow, *Heat transfer, *Furnaces, Open hearth furnaces, Equations of motion, *Thermodynamics.

Heat exchange in furnaces with non-uniform temperature distribution in the flowing gas is different from that in furnaces with a uniform temperature distribution. The formation of a layer of cooled gases under the flame, and between it and the roof, decreases the overall rate of heat transfer to the bath. In high temperature furnaces where the roof must not exceed a certain temperature, the screening action of a layer of gases over the flame can be used to increase heat transfer by 'directed' heat exchange. By changing the temperature and the blackness (absorptivity for radiation) of the gases over the flame, the permissible temperature of the flame can be raised, thus increasing heat transfer to the metal without raising the roof temperature. The contradictory results of various investigations of the effect of roof height on heat exchange can be explained by the absence of allowance in the experiments for the actual vertical temperature distribution. (Author)

Zenin, A. A.
CONCERNING ERRORS IN THE READINGS OF THERMOCOUPLES PASSING THROUGH A FLAME, tr. by George N. Kasachkoff. 7 Dec 62 [12]p. 1 ref. AMC(Redstone) Trans. Nr 42-62.
Order from OTS or SLA $1.60 63-13586

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 5, p. 68-74.

DESCRIPTORS: *Temperature, Heat transfer, *Thermocouples, Reading, Errors, Flames, Inertia, Mathematical analysis, Operational calculus.

The problem of heat transfer of a thermocouple to a gaseous medium is solved during passage of a thermocouple at a constant speed through a flame with an exponential temperature front. A formula is given for estimating the inadequacy of the temperature measured by a thermocouple due to its heat inertia and heat losses at its ends. (Author)

Wave Propagation

Beckmann, B.
CONCERNING THE RELATION OF THE FIELD INTENSITY TO THE LIMITS OF THE TRANSMISSION FREQUENCY RANGE (LUF, MUF) (A SIMPLE METHOD FOR THE ESTIMATION OF THE FIELD INTENSITY) [Über Baziehungen der Feldstarke zu den Grenzen des Unbertragungsfrequenzbereichs (LUF, MUF) tr. by J. M. Sprecher. Apr 61, 17p. 6 refs.
Order from OTS or SLA $1.60 62-23849

Trans. of [NTZ; Nachrichtentechnische Zeitschrift (West Germany) 1958, v. 11, p. 523-528].

DESCRIPTORS: *Wave transmission, *Radio waves, Propagation, Scattering, Ionosphere, Terrestrial magnetism, Electromagnetic fields, Measurement.

German, V. L.
ON THE PHASE STRUCTURE OF THE FIELD AND VELOCITY OF MEDIUM RANGE RADIO WAVE PROPAGATION OVER THE SEA SURFACE DURING TURBULENCE. [1962] 11p. 5 refs.
Order from OTS or SLA $1.60 62-18642

Trans. of Ukr[ayins'kyi] Fiz[ychnyi] Zh[urnal] (USSR) 1958, v. 3, no. 6, p. 712-720.

DESCRIPTORS: *Wave transmission, *Radio waves, Propagation, Velocity, Phase distortions, *Ocean waves, Turbulence, Integral equations.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACTIVITIES IN THE PRESIDIUM OF THE ACADEMY OF SCIENCES UKRAINIAN SSR. 24 Apr 63, 32p.
JPRS: 18871.
Order from OTS $1.00 63-21660

Trans. of Akademiya Nauk URSR [Kiev]. Dopovidi, 1962, no. 8, p. 1117-1121 and no. 10, p. 1392-1402.

DESCRIPTORS: *Scientific research, Scientific organizations, Petrology, Genetics, Economic geology, Biochemistry, Tracer studies, Geophysical prospecting.

Contents:
Coordination of scientific research in the natural and humanitarian sciences in the Ukrainian Republic by the Academy of Sciences, Ukrainian SSR
Scientific cooperation between the Academy of Sciences UkSSR and the Moldavian Academy of Sciences
Results of the scientific-technical and coordination

conference on problems of the utilization of petrographic raw materials of the Ukrainin SSR
Miscellaneous information
Status and prospects for the development of research on the problem "heredity control" in the Academy of Sciences Ukrainian SSR
Development of geological research in the Academy of Sciences UkSSR to improve the assistance in raising the effectiveness of geological prospecting in the Ukraine
Status and prospects for the development of research on molecular biology in the Academy of Sciences Ukrainian SSR
Prizes for works on the development and introduction of new techniques
All-Union Conference on Problems of the Utilization of Trace Elements in the National Economy (no. 4) Kiev, 4-9 June 62.

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY [SELECTED TRANSLATIONS] NO. 31. 24 Apr 63, 81p. 4 refs.
Order from OTS $2.25 63-21670

Trans. of Ti Li Hsüeh Pao (Chinese People's Republic) 1962, v. 28, no. 3, p. 175-185, 189, 191, 196, 200, 205, 241-256.

DESCRIPTORS: *Scientific research, *China, *Solar radiation, *Maps, *Rivers, Terrain, Geochemistry, Geography, *Conferences.

Contents:
The relationship between straight-line, scattered, and total solar radiation in China, by Tso Ta-K'ang and Kung Jan
Maps of Shan-Hwei River System and North China
Topography of North China Plain and its geochemical characteristics (abstract) by Ch'en Ching-sheng
On several basic problems in the division of natural regions, by Ching Kui-he
Outline of the 1962 academic conference on the division of natural regions, by Ch'in Ch'uan-jen

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY NO. 32. 25 Apr 63, 17p. 1 ref. JPRS: 18913.
Order from OTS $0.50 63-21684

Trans. of Ti Chih Lun P'ing (Chinese People's Republic) 1957, v. 17, no. 4, p. 381-382, 430-437.

DESCRIPTORS: Geology, *Economic geology, *Hydrology, *China, Water supplies, *Ores (Metal sources) Tin, *Scientific research.

Contents:
A discussion of some questions on the genesis of the Ku-chiu tin ore beds, by Wang Ch'uan and Fan Tzu-yu
Studies on the classification of ground water in the provinces of China, by Ch'en Meng-hsiung.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 119. 6 May 63, 71p. 42 refs. JPRS: 19053.
Order from OTS $2.00 63-21750

Trans. of #Zavodskaya Laboratoriya (USSR) 1962, v. 28, no. 10, p. 1224-1232; Avtomatika i Priborostroenie (USSR) 1963 [v. 2] no. 1(13) p. 32-34; and mono. transformation of Russian Syntagms of the Type S+S, S+P, V+S, V+P+S, Moscow, 1962, 52p.

DESCRIPTORS: *Machine translation, *Language, *Chemistry, Data processing systems, *Reading machines, Transformations.

Contents:
Machine information-logical methods in chemistry: Soviet review by G. E. Vleduts and A. L. Seifer
A device for reading handwritten and macnine printed numbers, by B. A. Bratus and others
Transformation of Russian syntagms of the type S+S, S+P, V+S, V+P+S, by V. P. Manolova.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 120. 8 May 63, 44p. 20 refs. JPRS: 19108.
Order from OTS $1.25 63-21786

Trans. of Voprosy Yazykoznaniya (USSR) 1963 [v. 12] no. 1, p. 113-130.

DESCRIPTORS: *Machine translation, *Language, *Vocabulary.

Contents:
On the standard form and quantitative characteristics of several linguistic descriptions, by I. A. Mel'chuk
Position of the expanded modifier with respect to the word modified in the Russian phrase, by V. Z. Sannikov.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, INSTRUMENT BUILDING SERIES, 1962, VOL. 4, NO. 4. 9 Apr 63, 121p. JPRS: 18629.
Order from OTS $2.75 63-21548

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1962, v. 5, no. 4, p. 1-126.

DESCRIPTORS: *Precision equipment, *Instrumentation, Engineering, *Scientific research, *Electronics, Cathodes (Electrom tubes), Fluxmeters, Transducers (Acoustic), Modulators, *Electronic equipment, Generators, Pulse integrator, Control systems, Nonlinear systems, Hysteresis, Gyroscopes, Mirrors, Interferometers, Calorimeters, Gas analysis, Rubber, Vibration isolators, *Engineering, Maintenance, Scientific personnel, History.

Contents:

Testing of high-power carbide cathodes with repeated gas sparks, by M. D. Gurevich, and S. I. Zilitinkevich
A photoelectric fluximeter of increased sensitivity, by A. N. Tkachenko
A study of a membrane-type electrokinetic converter, by M. S. Kasim-Zade
Calculation of a ring demodulator containing crystal diodes, by V. F. Kataev
An electronic indicator for a string transducer, by V. T. Derevyanchenko
An electronic infralow-frequency generator with a relay control unit, by A. A. Vavilov, and A. I. Solodovnikov
A pulse-frequency integrator for sign-variable information supplied as dc, by R. G. Karpov
Derivation of the periodic modes in a controlled system having nonlinearities with hysteresis, by E. I. Baranchuk
Motion of a free gyroscope with forced rotation of the bearings, by L. I. Kargu
Determination of the surface finish and optimal gap for gyro chamber and rotor, by A. G. Bessonov
Precision of manufacture and adjustment for plane mirrors in projectors, by A. G. Pogarev
An interferometer for examining stress distributions in plane models, by V. A. Moskalev and others
Calorimeters for rapid thermal tests on metals over wide temperature ranges, by L. V. Levkovich, and E. S. Platunov
Apparatus for examining gas metabolism of warm-blooded animals, by A. M. Mindlin
Design aspects of rubber dampers, by V. S. Novoselov
Analytic determination of displacements in a spatial three-link mechanism with contacting levers, by P. A. Lebedev
The average servicing period for instruments providing a given probability of faults, by V. F. Krapivin and G. B. Linkovskii
Vladimir Fedorovich Mitkevich (90th Anniversary) ...
Nikolai Petrovich Bogoroditskii (60th Anniversary) ...

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, INSTRUMENT BUILDING SERIES, 1962, VOL. 5, NO. 1. 9 May 63, 201p.
JPRS: 18943.
Order from OTS $3.50 63-21699

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1962, v. 5, no. 1, p. 3-149.

DESCRIPTORS: *Precision equipment, *Instrumentation, Engineering, *Scientific research, Electron beams, *Electrets, Filaments, Quality control, Electronic equipment, Triodes, Current transformers, Measuring devices (Electrical and Electronic), Magnetic recording systems, Computers, Transformers, Control systems, Servo amplifiers, Electric motors, Digital differential analyzers, Sequences, Gyroscopes, Surveying, Cams, Materials, Thermal conductivity, Colorimeters, Diffusion, Plastics, Geers, Connecting rods, Reports, Education.

Contents:

Electrostatic focusing of electron beams on electrets, by V. E. Manoilov and D. A. Tairova
An electronic instrument for automatic detection and counting of filament defects, by A. A. Bessonov
A semiconducting triode in a regime of transformation of low direct current into alternating current, by M. S. Nikolaenko and V. P. Fedotov
A vector-measuring device with reading in a rectangular system of coordinates, by A. L. Tsiber,
New possibilities of use of magnetic recording in instrument building, by A. I. Naidonov
On methods of constructing functional transformers with width modulation and averaging of voltages of special form, by V. B. Smolof and E. P. Ugryumov
Contribution towards a more precise investigation of the properties of a typical automatic control system I, by B. G. Sirazitdinov
A reversible system of control of the rate of rotation of a direct current motor with semiconductor keys, by T. A. Glazenko
On the question of increasing the accuracy of a digital differential analyzer, by G. G. Men'shikov
On the number of binary-decimal codes with positive weights suitable for computers, by D. A. Pospalov
On the motion of a statically balanced gyroscope in a cardan suspension set on a vibrating base, by A. M. Lestev
A gyrovertical with "liquid correction", by I. Ya. Starikov
Experimental investigation of an instrument for composition of plans of stereo surveying done on the ground, by I. A. Kaganskii
The mechanism of an instrument for determination of error in making the profile of cams, by Yu. P. Borenshtein
A method of rapid determination of the temperature dependence of the thermal conductivity of fibrous and free-flowing materials, by E. S. Platunov
Method of determination of thermophysical properties in a wide range of temperatures, by D. V. Budrin and others
Simplified methods of calculating the thermophysical coefficients of materials, by G. K. Avdeev
The specific rigidity of the teeth of textolite and polyamide gears, by M. V. Kukharev
Synthesis of a planar crank-connecting rod mechanism with limited value of the angle of transmission, by B. Ya. Beletskii
Dissertations in competition for the scientific degree of candidate of technical sciences at the Leningrad Institute of Precise Mechanics and Optics

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, INSTRUMENT BUILDING SERIES, 1962, VOL. 5, NO. 2. 12 Apr 63, 293p.
JPRS: 18668.
Order from OTS $4.00 63-21565

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1962, v. 5, no. 2, p. 1-157.

DESCRIPTORS: *Precision equipment, *Instrumentation, Engineering, *Scientific research, Amplifiers, *Electronic equipment, Automatic, Liquid-level gages, Galvanometers, Transistors, Voltmeters, Computers, Magnetic amplifiers, Power amplifiers, Balances, Gyro stabilizers, Timing devices, Cams, Mathematical analysis, Stresses, Mechanics, Clocks, Optical properties, Current transformers.

Contents:

Frequency characteristics of MDM-type dc amplifiers, by V. I. Anisimov
Universal electronic level gauge, by A. A. Bessonov
Galvonometric amplifier with mutual inductance converter, by A. V. Fremke and E. A. Kiseleva
Effect of curve shape on the choice of frequency selectivity of a 90^0 phase shift modulation indicator, by P. P. Ornatskii and Yu. A. Skripnik
Designing transistor converters of weak dc signals, by N. S. Nikolaenko and V. P. Fedotov
Portable electrostatic voltmeter for 250 kv, by Ch. M. Mashek
Instrument for accurately measuring stabilization voltage of silicon stabilivolts, by I. F. Klistorin and G. G. Matushkin
Transfer functions of computing elements considering small parameters, by V. S. Tarasov
Investigation of magnetic transistor amplifiers fed from a dc source, by E. N. Pokrovskii
On the stability of a standard control system I in the case of an "oscillating" power amplifier, by B. G. Sirazitdinov
Desk relay computer with full keyboard "neva-3", by N. N. Posnov and others
Automatic weighing of heavy objects, by A. L. Gurevich
Motion of three-axle gyroscopic stabilizer in a tumbler bearing, by D. S. Pel'por, and N. P. Sumarokov
Analysis of trigger regulator with dynamic lifting angle, by Z. M. Aksel'rod
Determining the profile of a nonspherical surface from the prescribed structure of a refracted pencil of rays, by M. M. Rusinov
Investigation of aberration curves of systems with decentered pupils, by Yu. A. Utekhin
Stress analysis of face cams, by L. P. Riftin
Investigation of the kinematics of three-dimensional five-section mechanisms of general form, by G. D. Ananov
Analysis of adjustment methods in the manufacture of watch plates, by K. A. Kuznetsov

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, INSTRUMENT BUILDING SERIES, 1962, VOL. 5, NO. 5, 22 Apr 63, 293p. JPRS: 18821.
Order from OTS $4.00 63-21630

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1962, v. 5, no. 5, p. 4-149. ##Another trans. of p. 140-147 is available from OTS or SLA $1.60 as 63-13470 JPRS-16588, 10 Dec 62 [12]p.

DESCRIPTORS: *Precision equipment, *Instrumentation, Engineering, *Scientific research, Cathodes (Electron tubes), Filters (Electromagnetic wave), Electrical engineering, Tensiometers, Control systems, Electric motors, Diodes, Amplifiers, Computers, Electronic equipment, Sequences, Gyroscopes, Clocks, Accelerometers, Prisms (Optics), Magnesium, Oxides, Reflection, Optical properties, Photometers, Friction, Bearings, Bioelectronics, Electronics, Biology, Medicine, Conferences.

Contents:

Testing high-power carbided cathodes under reduced vacuum, by B. I. Zilitinkevich and M. D. Gurevich
Concerning the use of physical modeling in calculation of optimum parameters for smoothing LC filters, by N. A. Levin
Differentiation of small displacements with the aid of inductive pickups supplied with direct current, by Yu. N. Bobkov
Static-dynamic tensometer equipment, by B. A. Glagovskii
Selection of commutation frequency of triodes in pulse-systems of electric drive by D-C motor, by T. A. Glazenko
Design of circuit parts for diode functional converters, by L. V. Krasnov
Design of optimum follow-up systems subjected to random influences, by E. D. Chernykh
Determination of errors caused by level-quantization in digital automatic control systems, by Yu. M. Korshunov
Device for multiplying and dividing voltages with dual-supply rotary transformers, by M. I. Chernenko and L. P. Shiniberov
Efficient order of counting in controlling binary counters, by Yu. K. Barsukov
Concerning the inertness of electrolytic correction pickups, by V. Yu. Torochkov
Analysis of the work of the mechanism for electrical winding, by Z. M. Aksel'rod
Filtering compensating accelerometer, by K. N. Sergeev and A. E. Sinel'nikov
Requirements for production and adjustment of octahedral prisms in gimbals, by G. V. Pogarev
Variation of spectral coefficient of diffused reflection of magnesium oxide within the range from 0.4 to 3.1 microns, by Vey Guan-Ven'
Measuring the reflectivity of a light-model in the presence of absorbing medium, by V. V. Ronzhin
Investigating one of the methods of reducing friction in supports, by I. M. Sivokonenko and K. N. Yavlenskii
All-union conference on the application of radioelectronics in medicine and biology (no. 2) by B. N. ##B. N. Aksenov and V. A. Khitun
Professor S. A. Izenbek [in memoriam].

NLL TRANSLATIONS BULLETIN, 1963, VOL. 5, NO. 3, P. 173-260. Mar 63, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes books received from the USSR, reports on visits, translations available for purchase or on loan from Lending Library Unit Loan Collection and trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1962 [v. 6] no. 11, p. 11-19; Avtomatika, Telemekhanika i Svyaz' (USSR) 1962 [v. 6] no. 10, p. 1-2; Avtomobil'naya Promyshlennost' (USSR) 1962 [v. 28] no. 10, p. 1-2; #Vestnik Svyazi (USSR) 1962 [v. 22] no. 9[270] p. 1-2.

DESCRIPTORS: Translations, *Chemical industry, Sanitation, Toxicity, Ventilation, *Automation, *Communication equipment, *Vehicles, Industrial production, *Communication systems, Quality control.

Contents:
On the hygienic significance of the rational planning of chemical plants, by E. N. Marchenko
On increasing the output of automation and communication equipment
The motor industry during 45 years of Soviet rule, by A. A. Anders
The fulfilment of planned targets and the improvement of the quality of work in communications departments.

NLL TRANSLATIONS BULLETIN, 1963, VOL. 5, NO. 4, P. 261-363. Apr 63, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes books received from the USSR, translations available on loan from Lending Library Unit Loan Collection, and trans. of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1962 [v. 16] no. 10, p. 37-43; no. 11, p. 47-51; Tekstil'naya Promyshlennost' (USSR) 1962 [v. 22] no. 8, p. 8-9, 39-40; and from Pravda [Moscow] (USSR) 1962, no. 332, 28 Nov, p. 2; 9 Dec, p. 3.

DESCRIPTORS: Translations, *Electronics, *Automation, Control systems, Industrial production, *Synthetic rubber, Fibers, *Fibers (Synthetic), Textiles, *Engineering, *Electronic accounting machines.

Contents:
Electronic technology, by M. Fedorov
The automation and mechanization of production control, by S. B. Livshits
Synthetic rubber will be better than natural rubber, by A. Korotkov
The use of synthetic fibres in industrial yarns, by L. A. Luvishis and N. A. Semina
The assortment of fabrics from new plants must be modern, by A. A. Panferova and R. P. Koroleva
Methods of mechanizing and automating engineering and administrative work in industrial enterprises, by G. E. Slezinger
The automation of production accounting at engineering works, by F. L. Nemtsev.

NLL TRANSLATIONS BULLETIN, 1963, VOL. 5, NO. 5, P. 365-482. May 63, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes books received from the USSR, translations available for purchase or on loan from National Lending Library for Science and Technology or elsewhere and trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 3(76) p. 14; no. 4(77) p. 12-13; Pravda [Moscow] 1962, 6 Oct, p. 2; 1963, 5 Feb, p. 2.

DESCRIPTORS: Translations, *Steel, *Casting, Economics, *Deserts, *Scientific information centers, Digital computers, Data storage systems, Production, Scientific personnel, *Scientific research.

Contents:
The continuous casting of steel and its economic importance, by V. Andreev
Problems associated with developing deserts, by M. Petrov
A new scientific centre - the objective: improved methods for the organization of production by N. Veduta
A year's work of the Soviet scientists, by M. V. Keldysh

Office of Technical Services, Dept. of Commerce, Washington, D. C.
COMPUTER RELATED RESEARCH. Feb 63, 25p. 369 refs. OTS Selective Bibliography SB-473, suppl.1.
Order from OTS $0.10 OTS SB-473, suppl. 1

DESCRIPTORS: *Bibliographies, *Computers, *Medical research, Behavior, Cybernetics, Bionics, *Artificial intelligence, *Pattern recognition, Speech, Identification, Reading machines, Teaching machines, *Adaptive control systems

Lists 369 domestic and foreign references added to the OTS collection during the period September 1961 through February 1963. The material is arranged in the following categories: medical and behavioral research, cybernetics and bionics, artificial intelligence, speech and character recognition, reading and teaching machines, adaptive control systems. Covers research on bioelectronics in medicine and human engineering, monitoring and analysis of physiological responses, computer evaluation of clinical data, electro-physiological research, automated instruction, pattern recognition, computer simulation of learning, recognition of speech by machine among other subjects.

PLANNING, FINANCING, AND UTILIZATION OF SCIENTIFIC RESEARCH IN THE USSR. 7 May 63, 9p. JPRS: 19078.
Order from OTS $0.50 63-21766

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, no. 11(84) 16 Mar, p. 3-4.

DESCRIPTORS: *Scientific research, Research program administration, Economics, Effectiveness.

Contents:
Irreplaceable substitutes, by N. Egorov
For effectiveness of scientific research, by I. Usatov.

PROBLEMS AND ACHIEVEMENTS IN SOVIET SCIENCE. 30 Apr 63, 23p. JPRS: 19020.
Order from OTS $0.75 63-21738

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 1, p. 3-10, 45-50.

DESCRIPTORS: Science, *Scientific research, *Industrial production.

Contents:
The most important problems of technical progress, by A. A. Blagonravov
The industrial application of scientific achievements (from the experience of the Academy of Sciences, UkSSR) by G. S. Pisarenko.

PROCEEDINGS OF THE RUMANIAN ACADEMY'S GENERAL MEETINGS, 1963, 18-21 63. 7 May 63, 31p. JPRS: 19086.
Order from OTS $1.00 63-21772

Trans. from Contemporanul (Rumania) 1963, no. 12, 22 Mar, p. 1, 6 and 7; and Scinteia (Rumania) 1963, 22 Mar, p. 1.

DESCRIPTORS: Scientific organizations, *Conferences, *Scientific research, Research program administration, Awards, *Scientific personnel.

Contents:
Report of the activities in 1962, by Stefan Milcu
Scientific research plan of the Academy of the R. P. R. for 1963, by Vasile Malinschi
The new presidium of the academy
New members of the Academy
Academy prizes for 1960
Academy prizes for 1961
Resumes of speeches by different academicians.

SCIENTIFIC RESEARCH IN YUGOSLAVIA. 25 Apr 63, 16p. JPRS: 18896.
Order from OTS $0.50 63-21672

Trans. of Privredni Pregled (Yugoslavia) 1963, 18 Jan, p. 1, 6-7.

DESCRIPTORS: *Scientific research, *Yugoslavia, Research program administration, *Economics, Costs.

Contents:
The organization of scientific research in Yugoslavia, by Ivica Marincic
The financing of scientific research work, by Franja Raknic.

SESSION NO. 19 OF THE COUNCIL OF THE COORDINATION OF SCIENTIFIC ACTIVITY OF THE ACADEMIES OF SCIENCES OF THE UNION'S REPUBLICS AND THE BRANCHES OF THE ACADEMY OF SCIENCES USSR. 29 Nov 61 [7]p. JPRS: 11375.
Order from OTS or SLA $1.10 63-19347

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 4, p. 68-72.

DESCRIPTORS: *Conferences, *Scientific research, Scientific organizations, Scientific personnel, Training.

TRANSLATED POLISH PATENTS (FIRST CLAIM ONLY). June 63 [118]p.
Order from OTS $2.50 63-11417

Trans. of Polish patents including patent number, class number, name and residence of patentee and patent owner, title, filing and priority date, and first claim of patents from the following years: 1957, 32 patents; 1958, 30 patents; 1960, 37 patents; 1961, 199 patents; 1962, 2 patents

DESCRIPTORS: *Patents, Inventions, *Poland

Gutchin, Izrail'.
BEASTS AND MACHINES. 23 Nov 62 [6]p. FTD-TT-62-1503; AD-294 512.
Order from OTS or SLA $1.10 63-15347

Trans. from Kommunist [Erevan] (USSR) 1962, 26 July, p. 4, col. 1-6.

DESCRIPTORS: *Cybernetics, *Training, Automatic, Machines, *Artificial intelligence, Pattern recognition.

Ivakhnenko, O. H.
TECHNICAL CYBERNETICS AND CONTROL MACHINES: SELF-IMPROVING CYBERNETIC AUTOMATIC CONTROL SYSTEMS CAPABLE OF "LEARNING" (Kybernetychni Systemy Avtomatychncho Upravlinnya Shcho Samoprokrashchuyutsya, Zdatni do "Navchannya"). Apr 63 [44]p. 14 refs. RTS-1967.
Order from OTS or SLA $4.60 63-19124

Trans. of Avtomatyka (USSR) 1959, no. 4, p. 1-24.

DESCRIPTORS: *Cybernetics, Automatic, *Control systems, Learning, Artificial intelligence, *Adaptive control systems, Feedback, Probability.

This article indicates the position occupied by self-improving systems, capable of "learning", in the general classification of cybernetic automatic control systems. The article discusses basic examples of such systems and outlines the methods used for their investigation. The arrangement of the article is due to the novelty of the subject. For the sake of clarity of the new principles pertaining to the new field, it is necessary to start from the already known principles of the theory of combined cybernetic systems. (Author)

Keldysh, M. V. and Lavrent'ev, M. A.
TOWARD NEW PROGRESS OF SCIENCE AND TECHNOLOGY [AND] IMPORTANT PROBLEMS OF SCIENTIFIC ORGANIZATION. 20 May 63, 25p. JPRS: JPRS: 19283.
Order from OTS $0.75 63-21864

Trans. of Akademiya Nauk SSSR. Vestnik, 1962, v. 32, no. 12, p. 9-14 and 16-18.

DESCRIPTORS: *Scientific research, *Scientific organizations, Energy management, Materials, Semiconductors, Chemical industry, Agriculture, Computers

Leshkovtsev, V.
HORIZONS OF SCIENCE. 30 Apr 63, 108p. (figs. omitted). JPRS: 19016.
Order from OTS $2.50 63-21735

Trans. of mono. Gorizonty Nauki, Moscow, 1963, 48p.

DESCRIPTORS: Science, *Scientific research, Energy, Labor, Man, Automation, Industrial production, Economics, Materials, Electronics, Cybernetics, Biology, Medicine, Space probes, Satellites (Artificial), Electric power production, Magnetohydrodynamics.

Contents:
The tempo of scientific development
The energy of tomorrow
The new industrial revolution: Automated factories and man

New materials, new possibilities
Radio-electronics and molecular electronics
Electronic technology: The technology of communism
The revolution being prepared by cybernetics
Biology and medicine for mankind
The conquest of the cosmos
In conclusion
Interesting and useful to know: A direct method to produce electrical energy.

Zamfirescu, Violeta.
INTERVIEW WITH ACADEMICIAN GR. C. MOISIL ON CYBERNETICS AND MATHEMATICAL LINGUISTICS. [6 May 63] 6p. JPRS: 19061.
Order from OTS $0.50 63-21749

Trans. of Luceafarul (Rumania) 1963, v. 6, no. 6, p. 6.

DESCRIPTORS: *Cybernetics, *Artificial intelligence, *Machine translation, Mathematical logic, Language, Philosophy, Mathematicians.

Communication Theory

Horniak, Eugeniusz and Wadolowski, Klemens.
RAILROAD SIGNALS: SELECTED CHAPTERS. tr. by H. W. [1959] [30]p. (diagrams omitted). H-3829.
Order from OTS or SLA $2.60 59-21141

Partial trans. of mono. Sygnaly Kolejowe, Warsaw, 1953.

DESCRIPTORS: *Railroads, *Signals, Communication equipment, Control systems, Traffic, Safety.

Myasnikov, L. L.
OBJECTIVE RECOGNITION OF SPEECH SOUNDS [Ob"ektivnoe Raspoznavanie Zvukov Rechi]. [1962] [15]p. [USASLA] Trans. Log no. 1059.
Order from OTS or SLA $1.60 62-32641

Trans. of [Zhurnal Tekhnicheskoi Fiziki] (USSR) 1943 [v. 13] no. 3 [p. 109-115].

DESCRIPTORS: *Speech, Intelligibility, *Speech transmission, *Speech representation, Sound.

Schulz, Hermann.
CONTRIBUTION TO THE PROBLEM OF DISTORTION AND ITS DEFINITION IN TELEGRAPHY. [1962] 6p.
Order from SLA $1.10 62-20349

Trans. of [NTZ; Nachrichtentechnische Zeitschrift] (West Germany) 1953, v. 6, no. 9, p. 413-416.

DESCRIPTORS: *Telegraph signals, Reliability, Distortion, Determination, Communication theory.

The degree of distortion of rhythmic and arhythmic telegraph systems is defined. Standard definitions are critically discussed. A survey is made of various types of distortion. (Author)

Seiffert, K. W.
OSCILLOGRAPHIC REPRESENTATION OF DISTORTION OF TELETYPE SIGNALS. [1962] 8p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-20348

Trans. of [NTZ; Nachrichtentechnische Zeitschrift] (West Germany) 1953, v. 6 [no. 5] p. 214-217.

DESCRIPTORS: *Teletype systems, *Telegraph signals, Distortion, Oscillation, Test methods, Test equipment (Electronics), *Oscillographs, Communication theory.

The distortions of teletype signals have principally been measured by instruments using the stroboscopic method. Now measuring methods have been developed indicating the distortion factor by means of a cathode ray oscillograph. Beginning with the fundamental criteria being valid for measuring the general distortion factor as well as the relative distortion factor, known and new measuring methods are described. (Author)

Ukrow, H.
HIGH-FREQUENCY TELEPHONY ALONG LINES IN UNDERGROUND MINING. [1963] 8p.
Order from ATS $11.50 ATS-96Q67G

Trans. of [ETZ] Elektrotech[nische] Z[eitschrift. Ausgabe] A. [Zentralblatt für Elektrotechnik] (West Germany) 1954, v. 75, no. 5, p. 194-197.

DESCRIPTORS: High frequency, *Mining engineering, *Telephone communication systems, Electromagnetic waves.

Photographic Equipment

Makino, Katsuo and Ohbuchi, Kazuo.
ELECTRIC CHARGING DEVICE FOR ELECTRONIC PHOTOGRAPHY. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-10272

Trans. of Japanese patent publication 62-1547, appl. 60-9394, date of pub. 8 May 62, date of appl. 19 Mar 60, by Fuji Photo Film Co.

DESCRIPTORS: Generators, *Electrical corona, *Electronic equipment, *Photographic printers, Operation, Design, Electrophotography.

Suzuki, Shigeru.
ELECTRONIC PHOTOGRAPH PRINTING DEVICE. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-10271

Trans. of Japanese patent publication 62-1546, appl. 59-40969, date of pub. 8 May 62, date of appl. 28 Dec 59, by Riken Kogaku Kogyo Co.

DESCRIPTORS: *Electronic equipment, *Photographic printers, Operation, Design, Electrophotography.

SOCIAL SCIENCES

OIL, COAL AND SULFUR STATISTICS OF THE MEXICAN INDUSTRY. [1962] [14]p.
Order from SLA $1.60 63-10436

Trans. of Chemische Industrie (West Germany) 1957, v. 9, Dec, p. 658-666.

DESCRIPTORS: *Industrial production, *Mexico, Oils, Sulfur, Coal, Petroleum industry, *Chemical industry, Statistical data, Commerce, Economics.

Harms.
THE ECONOMIC SITUATION OF THE GERMAN PHARMACEUTICAL INDUSTRY: GERMAN AND EUROPEAN COMMON MARKET LAWS AFFECTING IT. [1962] 13p.
Order from SLA $1.60 63-10514

Trans. of [die] Pharmazeutische Industrie (West Germany) 1962, v. 24 [no. 6] p. 261-268.

DESCRIPTORS: *Economics, Germany, *Drugs, *Medicine, *Industrial production, Toxicity, Propaganda, Commerce.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
INFORMATION STORAGE AND RETRIEVAL. Apr 63, 25p. 302 refs. OTS Selected Bibliography SB-475 Suppl. 1
Order from OTS $0.10 OTS SB-475 Suppl. 1

DESCRIPTORS: *Bibliographies, *Documentation, *Data storage systems, *Information retrieval, Subject indexing.

Lists 302 reports and translations added to the OTS collection during the period September 1961 to February 1963. Covers research on various data storage systems, data reduction, documentation, mechanized literature searching, flow of information among scientists, standardization of retrieval language and systems, coordinate indexing, machine association of ideas, machine indexing, machine classification of information and sampled data feedback systems among other subjects.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6178
Omel'chenko, Svetlana Ivanovna
EPOXY RESINS (Epoksidnyye smoly) Kiyev, Gostekhizdat UkrSSR, 1962. 102 p. 3100 copies printed.

BR-POL/6179
Gibas, Tadeusz
SINTERED CERAMICS AND CERMETS (Spieki ceramiczne i cermetale) Warszawa, Wydawn. Naukowo Techniczne, 1961. 257p. Errata slip inserted. 2690 copies printed.

BR-SOV/6180
Kudryavtsev, Boris Borisovich
ULTRASONIC METHODS OF INVESTIGATING MATTER(Ul'traakusticheskiye metody issledovaniya veshchestva) Moscow, Uchpedgiz, 1961. 132p. 12,000 copies printed.

BR-SOV/6182
Murugov, Viktor Semenovich, and Oleg Vasil'yevich Yaremenko
SEA VESSELS WITH HYDROFOILS (Morskiye suda na podvodnykh kryl'yakh) Moscow, Izd-vo "Morskoy transport," 1962. 134p. 3600 copies printed.

BR-SOV/6183
Gordov, Aleksandr Nikolayevich
MEASUREMENT OF TEMPERATURES GAS FLOWS (Izmereniya temperatur gasovykh potokov) Moscow, Mashgiz. 1962. 135p. 5000 copies printed.

BR-SOV/6184
Livanov, Mikhail Nikolayevich
SOME PROBLEMS IN THE EFFECT OF IONIZING RADIATION UPON THE NERVOUS SYSTEM (Nekotoryye problemy deystviya ioniziruyushchey radiatsii na nervnuyu sistemu) Moscow, Medgiz, 1962. 195p. 4000 copies printed.

BR-SOV/6185
Buslenko, N. P., D. I. Golenko, I. M. Sobol', V. G. Sragovich, and Yu. A. Shreyder.
METHOD OF STATISTICAL TESTING: THE MONTE CARLO METHOD (Metod statisticheskikh ispytaniy; metod Monte-Karlo) Moscow, Fizmatgiz, 1962. 331p. (Series: Spravochnaya matematicheskaya biblioteka) 22,000 copies printed.

BR-SOV/6186
Lyubarskiy, Kronid Arkad'yevich
ESSAYS IN ASTROBIOLOGY (Ocherki po astrobiologii) Moscow, Izd-vo AN SSSR, 1962. 119p. Errata printed on the inside of back cover. 5000 copies printed.

BR-SOV/6187
Davidenkov, Nikolay Nikolayevich, and Vladimir Aleksandrovich Likhachev
IRREVERSIBLE DEFORMATION OF METALS UNDER THE EFFECT OF THERMAL CYCLES (Neobratimoye formoizmeneniye metallov pri tsiklicheskom teplovom vozdeystvii) Moscow, Mashgiz, 1962. 221p. 4000 copies printed.

BR-SOV/6189
Katts, Nikolay Vasil'yevich
METALLIZATION OF TEXTILES (Metallizatsiya tkaney) Moscow, Rostekhizdat, 1962. 169p. 2100 copies printed.

BR-SOV/6192
Denisov, Viktor Grigor'yevich, and Rostislav Nikolayevich Lopatin
FLIGHT-NAVIGATION INSTRUMENTS: THE PILOTING OF A PLANE BY INSTRUMENTS (Pilotazhno-navigatsionnyye pribory; o pilotirovanii samoleta po priboram) Moscow, Voyenizdat, 1962. 108p. 7500 copies printed

BR-SOV/6194
Slutskaya, Valentina Viktorovna
THIN FILMS IN ULTRAHIGH-FREQUENCY TECHNOLOGY (Tonkiye plenki v tekhnike sverkhvysokikh chastot) Moscow, Gosenergoizdat, 1962. 398p. 8000 copies printed.

BR-SOV/6196
Margolis, Liya Yakovlevna
HETEROGENEOUS CATALYTIC OXIDATION OF HYDROCARBONS: SYNTHESIS OF MONOMERS (Geterogennoye kataliticheskoye okisleniye uglevodorodov; sintez monomerov) Moscow, Gostoptekhizdat, 1962. 246p. Errata slip inserted. 2700 copies printed.

BR-SOV/6197
Tsibizov, Nikolay Ivanovich
MEANS OF MECHANIZATION OF THE MANUFACTURE AND [QUALITY] CONTROL OF BUNCHED ELECTRICAL CONDUCTORS (Sredstva mekhanizatsii izgotovleniya i kontrolya zhgutov elektroprovodov) Moscow, Oborongiz, 1962. 238p. 5020 copies printed.

BR-CHICOM/6198
Su Pu-ch'ing
MODERN DIFFERENTIAL GEOMETRY (Hsien Tai Wei Fen Chi Ho Hsüeh Kai Lun) Shanghai, Shang Hai K'o Hsüeh Chi Shu Ch'u Pan She, 1961. 290p. 8000 copies printed.

TRANSLATIONS IN PROCESS

INVESTIGATION OF SPECIAL ELECTRIC AIRCRAFT MACHINES (Issledovanie Spetsial'nykh Aviatsionnykh Elektricheskikh Mashin).
[Aviatsionnyi Institut, Moscow]. Trudy (USSR) 1961, no. 133, 152p.

[NO ENGLISH TITLE GIVEN] (Nakopitel'nye Ustroistva).
Mono. Nauchno-Tekhnicheskoi Konferentsii po Yadernoi Fiziki i Lineinyn Uskoritelyan, 10-14 Okt 61. Materialy, Chast' 3, Kharkov, 1962, 131p.

Aizerman, M. A., Gusev, L. A. and others.
TIME PACE CONVERSION OF SEQUENTIAL MACHINES AND THE SYNTHESIS OF RELAY CIRCUITS.
Avtomatika i Telemekhanika (USSR) 1962, v. 23, no. 11, p. 1465-1491.

Alakseev, S. M., Balkind, Ya. V. and others.
MODERN MEANS FOR EMERGENCY ESCAPE FROM AN AIRCRAFT.
Mono. Sovremennye Sredstva Avariinogo Pokidaniya Samoleta, Chap. 1, 9-10, Moscow, n.d., p. 5-23, 307-407, 408-431.

Alemasov, V. E.
THEORY OF ROCKET ENGINES.
Mono. Teoriya Raketnykh Dvigatelei, Moscow, 1962, 476p.

Andrianov, K. A.
POLYMERS OF MOLECULES WITH INORGANIC MAIN CHAINS.
Mono. Polimery s Neorganicheskimi Glavnymi Tsepyami Molekul, Moscow, 1962, p. 3-327.

Assonov, V. A. and Paporotskii, L. A.
NEW DEVELOPMENTS IN BLASTING MEANS AND METHODS (Novoe v Sredstvakh i Sposobakh Vzryvaniya).
Vzryvnoe Delo (USSR) 1962, no. 48/5, 124p.

Bertinov, A. L.
AIRCRAFT ELECTRIC GENERATORS.
Mono. Aviatsionnye Elektricheskie Generatory, Moscow, 1959, 594p.

Borovik-Romanova, T. F. and Kutsenko, Yu. I.
DETERMINATION OF RARE AND TRACE ELEMENTS IN SOILS, PLANTS, AND WATERS.
Mono. Spektral'noe Opredelenie Redkikh i Rassetannykh Elementov, Moscow, 1962, p. 204-238.

Denisov, V. G. and Lopatin, R. N.
POLOT AND THE AIRCRAFT.
Mono. Letchik i Samolet, Moscow, 1962, 203p.

Deschreider, A. R.
RESEARCH IN GAMMA IRRADIATION OF WHEAT FLOUR (Recherches sur l'Irradiation Gamma de la Farine de Froment).
Conserva (Netherlands) 1961/62, v. 10, no. 6, p. 115ff. (33p.).

Dikushin, V. I., ed.
TREATMENT OF HEAT-RESISTANT ALLOYS: COLLECTION OF REPORTS (CONFERENCE ON THE TREATMENT OF HEAT-RESISTANT ALLOYS [HELD IN] MOSCOW, 1957).
Mono. Obrabotka Zharoprochnykh Splavov; Sbornik Dokladov, Moscow, 1960, 231p. (Soveshchanie po Obrabotke Zharoprochnykh Splavov, Moskva, 1957).

Dorofeev, V. M. and Levin, V. Ya.
TESTING OF AIR-BREATHING JET ENGINES.
Mono. Ispytaniya Vozdushno-Reaktivnykh Dvigatelei, Moscow, 1961, 220p.

Dvitrievskii, A. A. and Koshevov, V. N.
PHYSICAL PRINCIPLES OF ROCKET FLIGHT.
Mono. Fizicheskie Osnovy Poleta Raket, Moscow, 1962, 77p.

Federeev, P. G.
RECTIFIERS AND REGULATORS.
Mono. Vypryaniteli i Stabilizatory, Moscow, 1960, 517p.

Friedel, J.
[NO ENGLISH TITLE GIVEN] (Defauts Ponctuels et Irradiation). Low Temperature Physics lectures delivered at Les Houches 1961 Summer School of Theoretical Physics, U. of Grenoble.
Unidentified mono. pub. 1962, p. 551-628.

Gakhov, F. D. and Smagina, V. I.
EXCEPTIONAL CASES OF CONFOLUTION-TYPE INTEGRAL EQUATIONS AND EQUATIONS OF THE FIRST KIND.
A[kademiya] N[auk] SSSR. Izvestiya. Seriya Matematicheskaya, 1962, v. 26, no. 3, p. 361-390.

Golushko, N. A.
GRAPHITE CONTAINING REFRACTORY MATERIALS.
Mono. Grafitsodenzhashchie Ogneupory, Moscow, 1962, 110p.

Gorst, A. G.
GUN POWDERS AND EXPLOSIVES.
Mono. Porokha i Vzryvchatye Veshchestva, 2d rev. ed. Moscow, n.d., 187p.

Gribovskii, P. O.
HOST CASTINGS OF CERAMIC ARTICLES.
Mono. Goryachee Lit'e Keramicheskikh Izdelii, Moscow, 1961, p. 4-10, 45-48, 362-373, 391-394.

Gusev, V. P.
TECHNOLOGY OF PRODUCTION FOR RADIO ELECTRONIC-APPARATUS.
Mono. Tekhnologiya Proizvodstva Radioelektronnoi Apparatury, Moscow, 1961, 388p.

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EXPERIMENTAL STUDIES OF THE SCATTERING OF SOUND WAVES IN THE ATMOSPHERE (Atmosfernaya Trubulentnost').
A[kademiya] N[auk] SSSR. Institut Fiziki Atmosfery. Trudy, 1962, no. 4, p. 203-256.

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HIGH POWER ELECTRONICS.
Mono. Elektronika Bol'shikh Moshchnostei, Moscow, 1962, 195p.

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HIGH POWER ELECTRONICS.
Uspekhi Fizicheskikh Nauk (USSR) 1962, v. 78, no. 2, p. 181-265.

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APPROXIMATE INVESTIGATION OF SOME TYPES OF STRONGLY NON-LINEAR AUTONOMOUS SYSTEMS.
Avtomaticheskoe Upravlenie i Vychislitel'naya Tekhnika (USSR) 1962, v. 5, p. 365-442.

Krinetskii, I. I.
DESIGN OF NONLINEAR AUTOMATIC SYSTEMS.
Mono. Raschet Nelineinykh Avtomaticheskikh Sistem, Kiev, 1962, 24p.

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